3. HydroView_MPE Operations

This chapter explains each operation within HydroView_MPE and is designed to assist the user in selecting appropriate functions for monitoring a hydrometeorological situation. It includes a presentation of all pertinent HydroView_MPE windows, a HydroView_MPE Operations Guide, and a HydroView_MPE Functional Guide (i.e., a How Do I ? Guide). The windows presented in this chapter are from the operation of the HydroView_MPE component of the WHFS. Each window is annotated. Many windows present detailed information for a specific river forecast point, river data point, reservoir station, or other hydrometeorological data collection station; therefore, a station must be selected prior to their use. Station selection is accomplished using the **Station Selection** option of the **LiveData** menu in the HydroView_MPE root window or by *Double-clicking* on the desired station in the Geographic Display. Where appropriate, a source window(s) (e.g., the window used to access the featured window) is provided in the background as a reference.

HydroView_MPE provides the forecaster with a set of displays for monitoring the hydrometeorological situation. The Geographic Display, along with its various data overlays, is a useful tool for the forecaster. The Geographic Display is controlled through the **Point Display Control** and **Flash Flood Guidance** options of the **LiveData** menu and the options available on the **MPEfields** menu. The forecaster should become familiar with the many features available through these options.

Some screens in HydroView_MPE refer to various data codes for some parameters. These codes are as referenced in ***S**tandard **H**ydrometeorological **E**xchange **F**ormat*, *Weather Service Hydrology Handbook No. 1*.

Troubleshooting HydroView_MPE

Most errors associated with the use of HydroView_MPE are displayed in a pop-up window or error dialog shown on the screen. Generally, the pop-up window states the nature of the error (e.g., a date entered in an improper format). The HydroView_MPE application is designed to continue once the error is corrected.

Getting Started

Method One

1) From the workstation D2D screen, locate the mouse pointer on a dead area (no windows displayed) and single click the right mouse button. The **System Control Menu** will be displayed.

2) Click the left mouse button on **Hydro Apps**. The **Hydrologic Applications Menu** will be displayed.

3) Click the left mouse button on **HydroView_MPE** in the **Hydrologic Applications Menu**. A pop-up window will be displayed to indicate that HydroView_MPE initialization is in progress, and, when initialization is completed, the **HydroView_MPE Root Window** will be displayed.

Method Two

1) From the D2D display, click on **Surface** on the Menu Bar.

2) Click the left mouse button on **Hydro Apps**. A menu will be displayed.

3) Click the left mouse button on **HydroView_MPE**. A pop-up window will be displayed to indicate that HydroView_MPE initialization is in progress, and, when initialization is completed, the **HydroView_MPE Root Window** will be displayed.

HydroView_MPE Windows

The following pages present the various windows used in the operation of HydroView_MPE. A list of these windows is provided below.

HydroView_MPE Windows

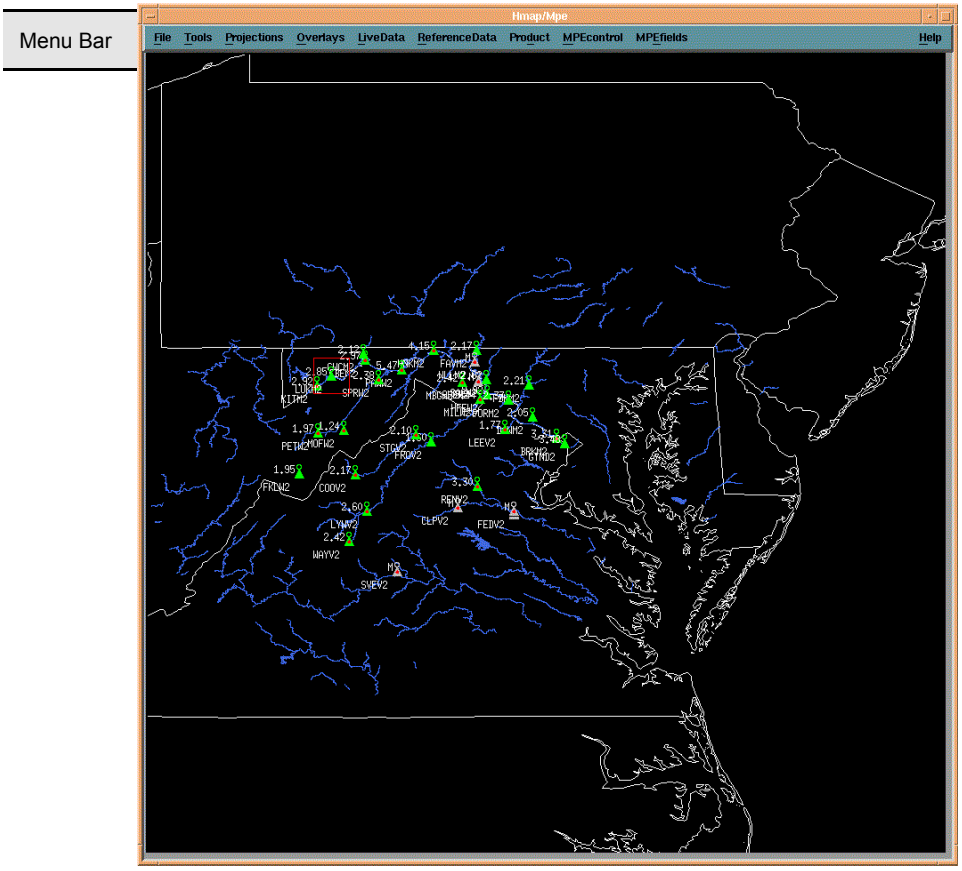
HydroView_MPE Windows

Window	Use	Page
Graphical Time Series Display Window	Display a graph(s) of the requested time series observations and forecast data for the selected station or predefined time series group	3-20
Tabular Time Series Display Window	Display tabular time series observations and forecast data for the selected station or predefined time series group and insert, edit, or delete values in the table	3-21
Alert and Alarm Data Window	Display data that have exceeded alert and alarm thresholds based on value and rate-of-change quality control parameters	3-22
Questionable and Bad Data Window	Display all data marked as questionable or bad during the quality control processes	3-23
Rejected Data Trash Can Window	Display all rejected observations; move records to data tables or delete them from the system	3-24
Station Reporting Status/Latest Observations Window	Display the reporting status of all stations in the HSA for all measured parameters	3-25
Point Precipitation Accumulations Window	Select a point, then calculate and display precipitation accumulations information for that point	3-26
Station Profile Window	Display geophysical information and current stage data for the selected station and other stations along the reach	3-27
River Summary Window	Display currently available stage data for all stations along a selected stream	3-28
Site Specific Headwater Model Window	Run a hydrologic model to generate a river stage forecast based upon observed and forecast rainfall amounts	3-29
Station Selection Window	Identify a specific station for further data evaluations	3-30
Refresh Data Window	Load and display the latest available data for the selected station	3-31
Reference Data Menu Options	Menu of options for displaying background information and data for a selected station	3-32
Staff Gage Window	Display gage background information for a selected station	3-33

HydroView_MPE Windows

HydroView_MPE Windows

HydroView_MPE Root Window - Starting point to access all operations within HydroView_MPE; use the Geographic Display to monitor hydrologic events.



Notes:

River stations with current data available have a green (normal), yellow (action level), or red (flood) icon. Stations with missing data have a grey icon. **S**elect a station for displays in LiveData, ReferenceData, and Product menus.

Station can be selected by a <u>double</u> *Click* of the left mouse button on the station icon or by using the Select Station option from the LiveData menu. A double left button *Click* on a selected station will deselect the station.

Current station selected appears in a RED box on the geographic display.

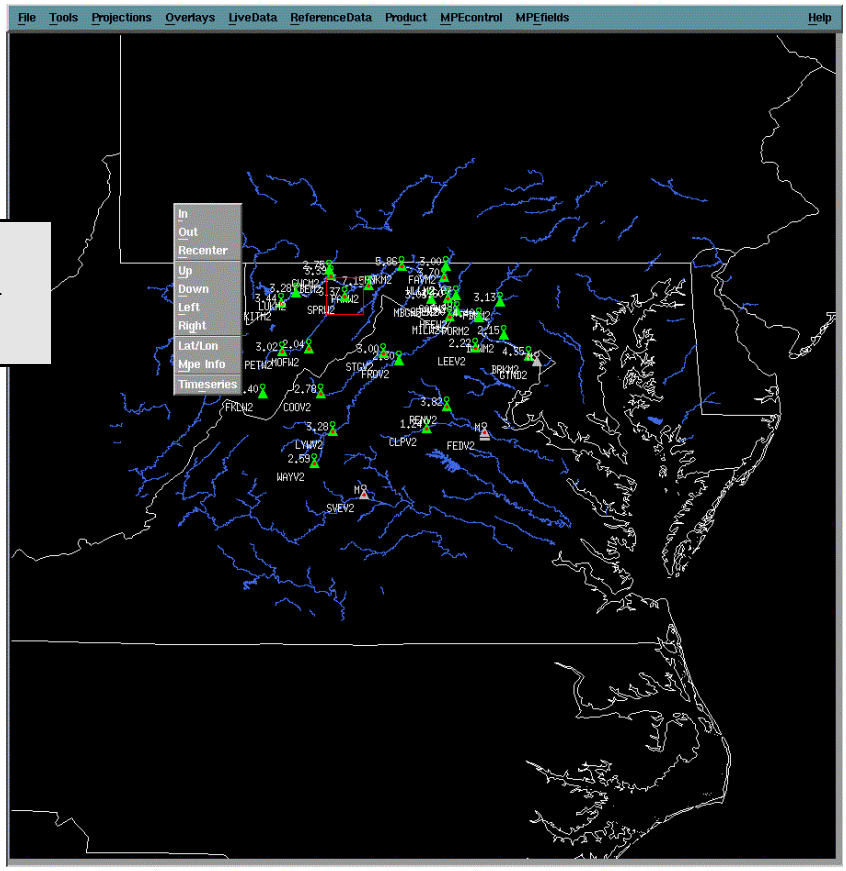
Double *Clicking* the middle mouse button on a station icon will select the station and display the Time Series Control Window. (See pp. 3-20 through 3-22 for information regarding use of the time series display screens. Detailed information regarding the WHFS Time Series Function is contained in Appendix C.)

To zoom out and recenter the display, <u>single</u> *Click* the left mouse button at the desired center point.

To zoom in and recenter the display, <u>single</u> *Click* the middle mouse button at the desired center point.

To display a pop up menu with additional options, <u>single</u> *Click* the right mouse button anywhere on the geographic display.

Root Window (Pop Up Menu displayed) - Use the Pop Up Menu to manipulate the Geographic Display.



Select menu option.

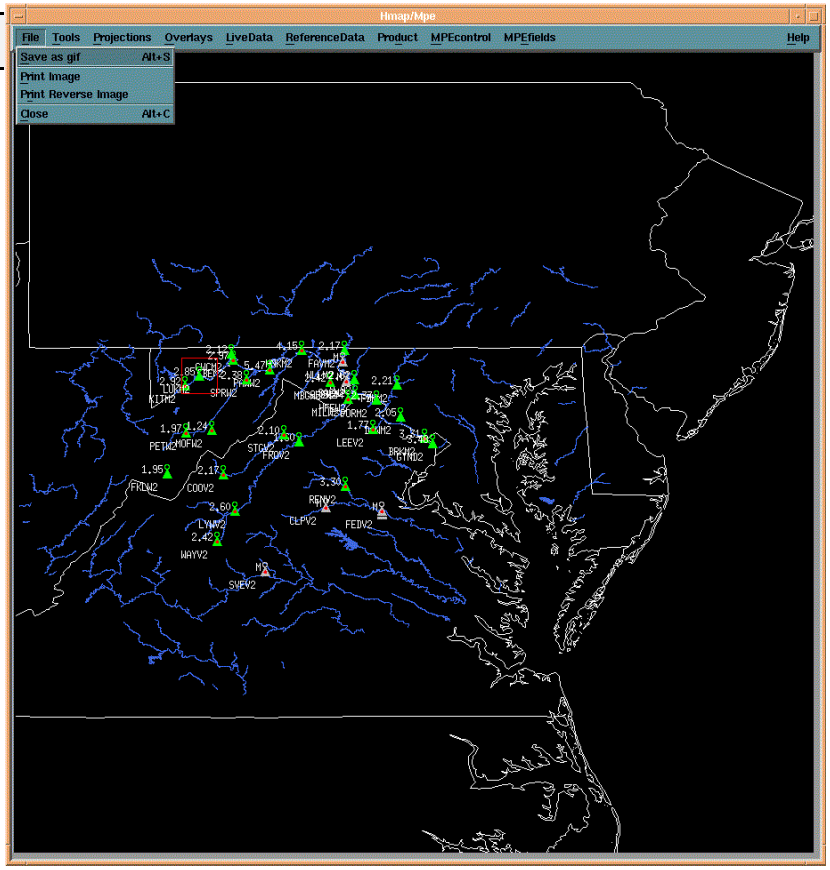
Access the Pop Up Menu by *Clicking* the right mouse button within the geographic display.

Notes:

Select **In** to zoom the map in.
Select **Out** to zoom the map out.
To recenter the map, select **Recenter** and then *Click* with the left mouse button on the desired center point.
Select **Up** to pan the map up.
Select **Down** to pan the map down.
Select **Left** to pan the map left.
Select **Right** to pan the map right.
Select **Lat/Lon** to toggle on/off the latitude/longitude display that moves with the cursor.
Select **MPE Info** to toggle on/off the MPE legend.
To display the Time Series Control for a station, select **Timeseries** and then *Click* with the left mouse button on the desired station icon. The station clicked on will be highlighted and the Time Series Control window for the station displayed.

Root Window (File selected from the Menu Bar) - Use this selection to capture the HydroView_MPE display as a GIF file or print image or to close the application.

Click on File



Access this selection from the **Root Window** by *Clicking* on **File**.

Notes:

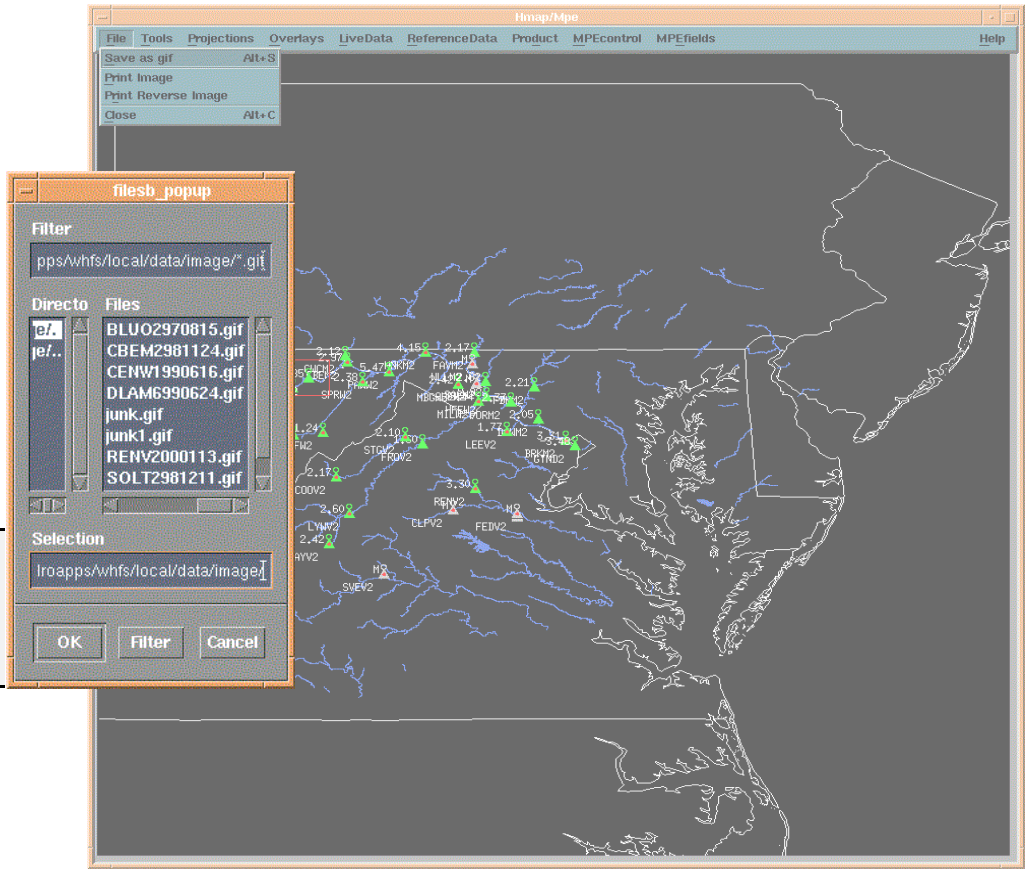
Select **Save as gif** to capture the current HydroView_MPE display as a GIF-formatted graphic image file.

Select **Print Image** to capture the current HydroView_MPE display and output the image to the printer.

Select **Print Reverse Image** to capture the current HydroView_MPE display and output the image in reverse video to the printer.

Select **Close** to close the application.

Save As GIF Window - Use this selection to save the current HydroView_MPE Geographic Display as a GIF-formatted image file.



Create destination file name with .gif extension

Click OK to save file

Access this selection from the **Root Window** by *Clicking* on **File**, then on **Save as gif**.

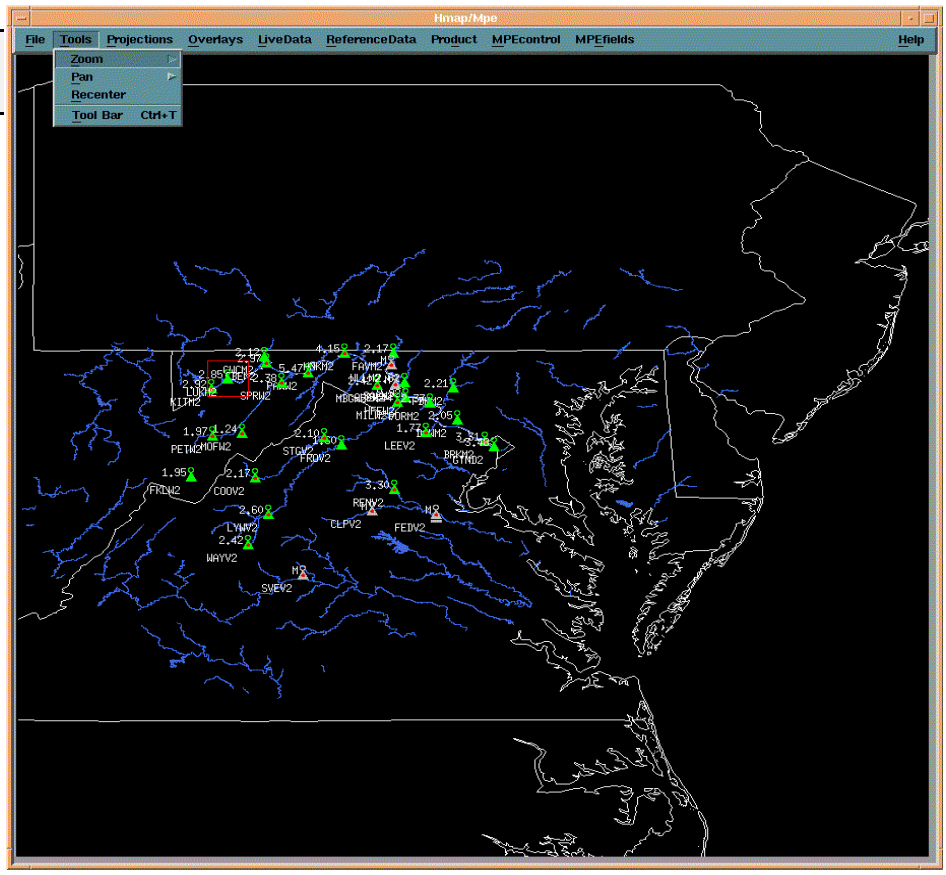
Notes:

The user should make sure that nothing is obscuring the Geographic Display before *Clicking* **OK** in the dialog box. Any windows that obscure or overlap the viewing area will be captured and become part of the resulting image file.

If the destination image file does not have the extension .gif, an error will result.

Root Window (Tools selected from the Menu Bar) - Use this selection to zoom, pan, or recenter the map in the Geographic Display or to turn the Map Toolbar on or off.

Click on Tools



Access this selection from the **Root Window** by *Clicking* on **Tools**.

Notes:

Select **Zoom** to cascade a zoom menu with the options **In** and **Out**. Select **In** to zoom in, **Out** to zoom out on the map.

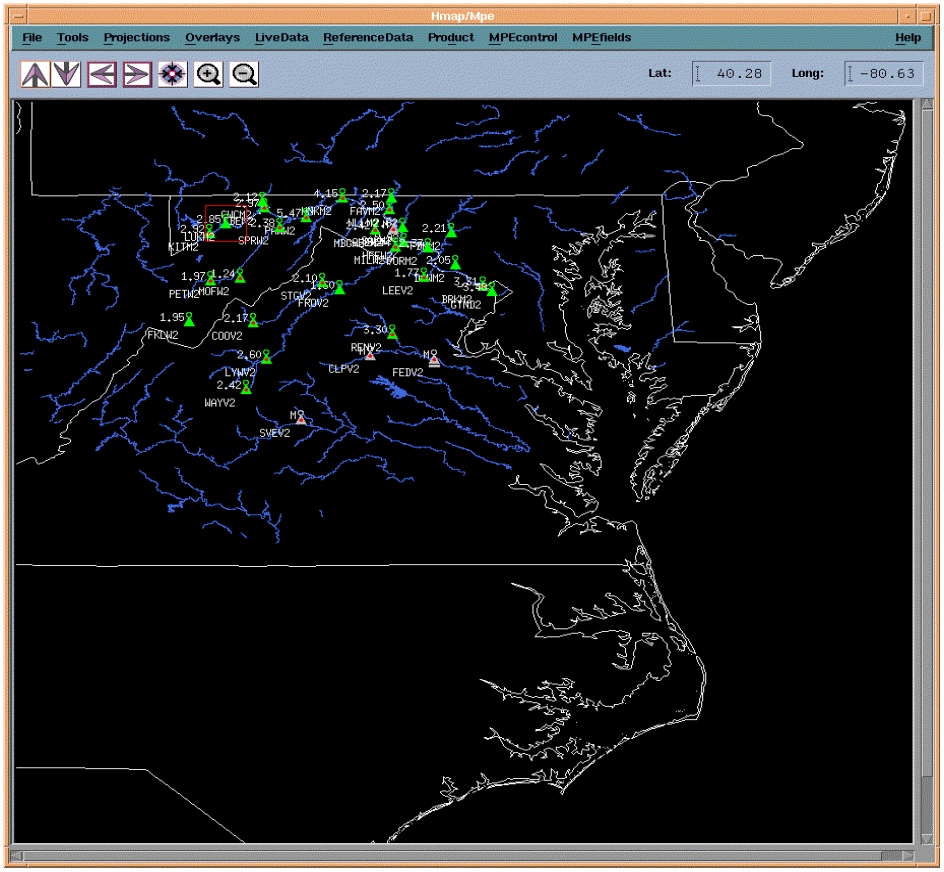
Select **Pan** to cascade a pan menu with the options **Up**, **Down**, **Right**, and **Left**. Use these options to navigate the map.

Select **Recenter** to recenter the map on a specified location. When this option is selected, the cursor changes to a leftward pointing hand. While the hand cursor is displayed, a single left mouse button click on the map display will recenter the map around the point where the hand cursor is located.

Select **Tool Bar** to enable or disable display of the Map Toolbar. By default, the Map Toolbar is disabled. When enabled, the Map Toolbar is displayed just below the main menu bar. Toolbar buttons offer an alternative means of accessing the map zoom, pan, and recenter functions. Another alternative method of navigating the map display is provided by the Pop Up Menu (see page 3-9).

Root Window (Map Toolbar displayed) - Use the Map Toolbar to navigate the map display and to view the latitude and longitude coordinates of the current cursor position.

Use Toolbar buttons to navigate the map display (pan up, pan down, pan left, pan right, recenter, zoom in, and zoom out, respectively)

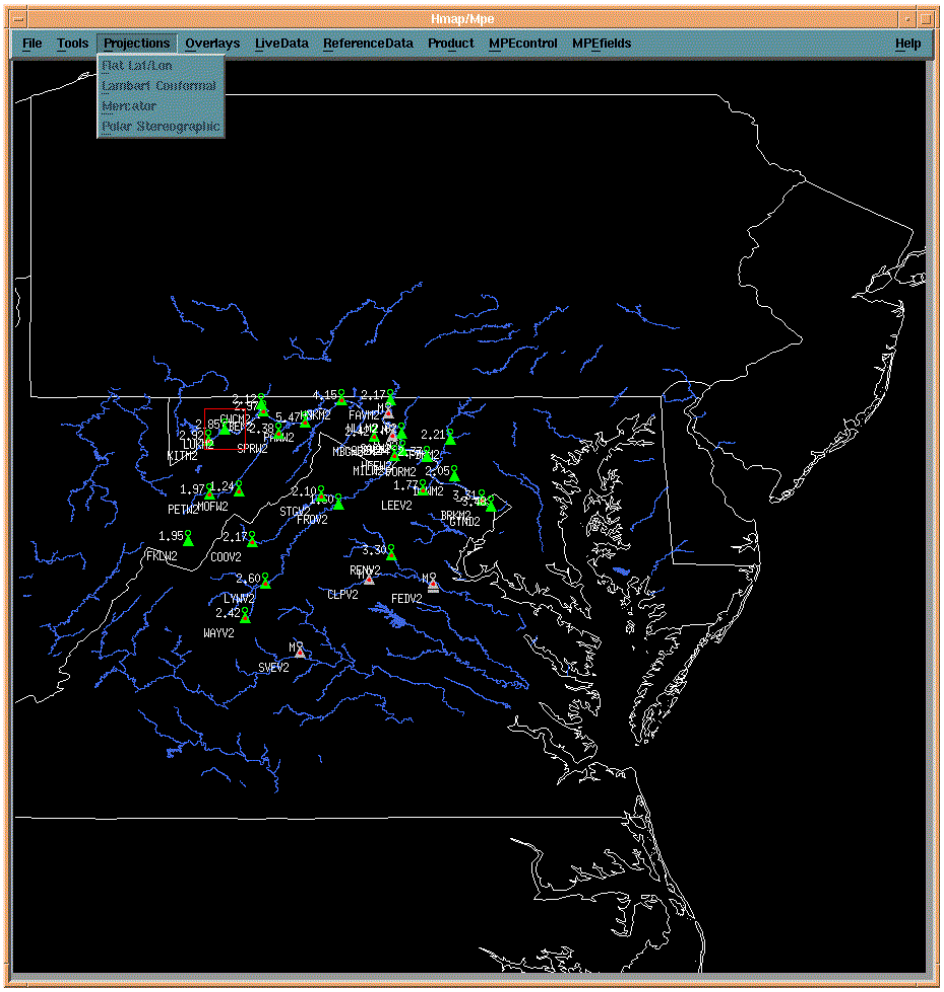


Displayed coordinates reflect the latitude and longitude of the current cursor position.

Turn on the Map Toolbar from the **Root Window** by *Clicking* on **Tools**, then on **Tool Bar**.

Root Window (Projections selected from the Menu Bar) - The projections menu is not currently implemented. When available, it will provide the capability to switch among different map projections in plotting and viewing the HydroView_MPE data.

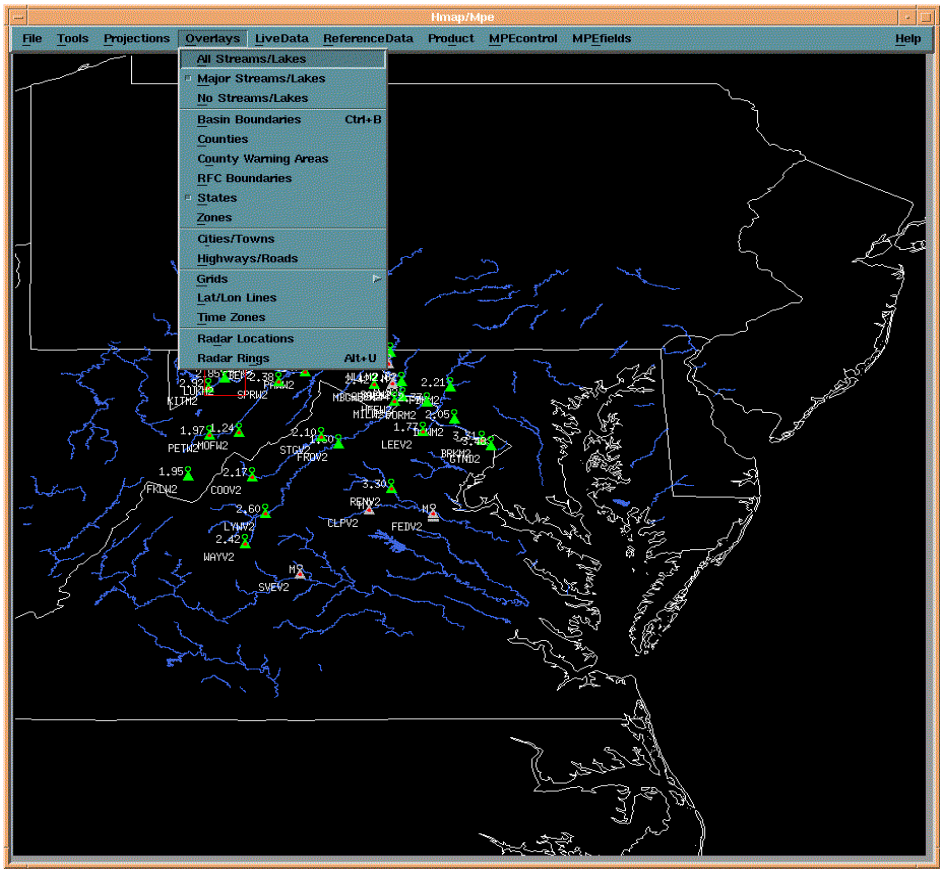
Click on Projections



Access this selection from the **Root Window** by *Clicking* on **Projections**.

Root Window (Overlays selected from the Menu Bar) - Use this selection to enable or disable display of the various overlays offered on the HydroView_MPE Geographic Display.

Click on Overlays



Access this selection from the **Root Window** by *Clicking* on **Overlays**.

Notes:

Overlays are drawn on top of spatial data, such as precipitation fields and FFG grids.

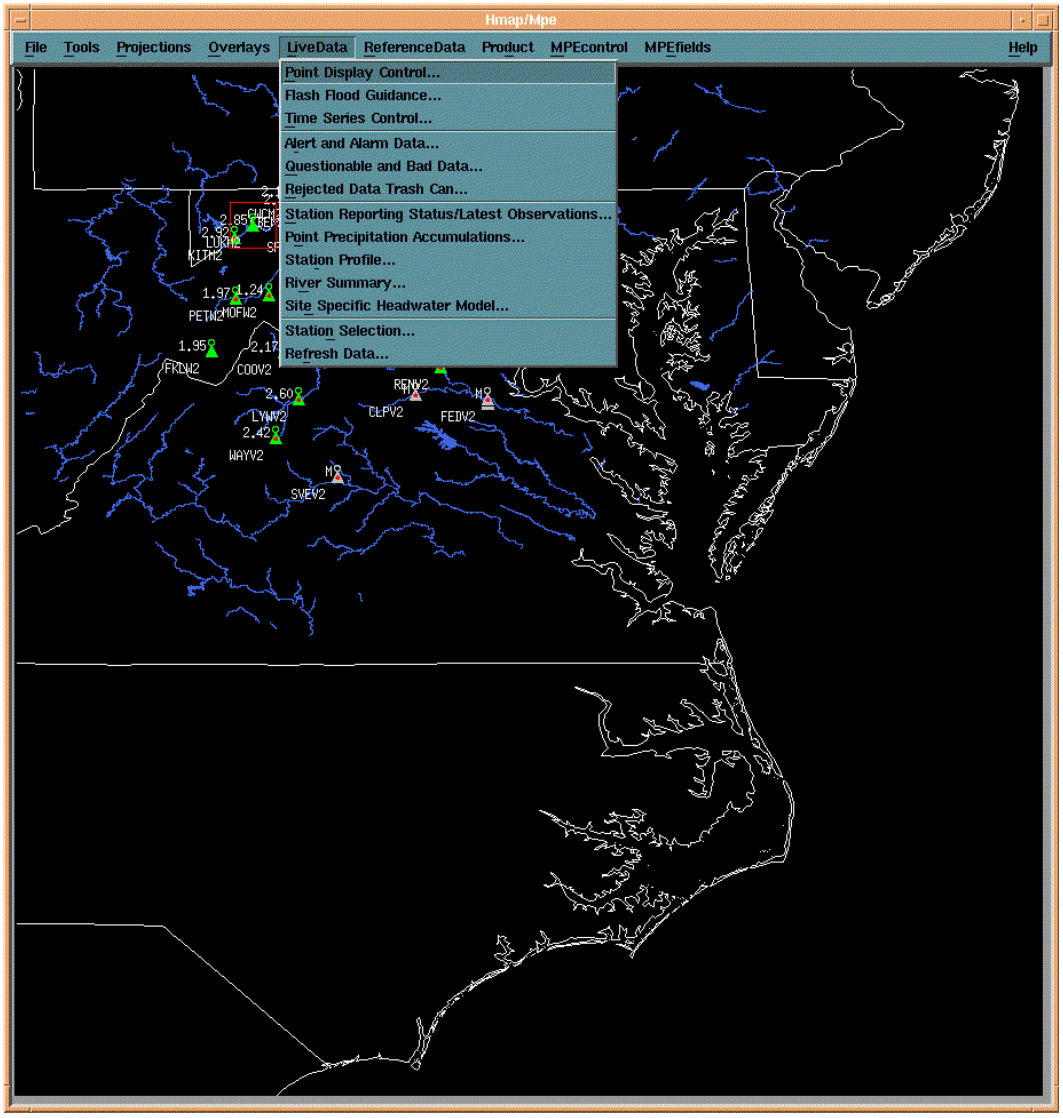
While it is possible to display multiple overlays simultaneously, this results in an increase in the time required to redraw the hydrologic data when a display altering operation, such as zooming, is performed.

By default, the **Major Streams/Lakes** and **States** overlays are enabled.

Overlays remain displayed when changing hours. The color coding of **Radar Rings** is updated when changing hours, but it is not updated during a time lapse.

Root Window (Live Data selected from the Menu Bar) - Use this selection to select a specific station or to display realtime data and information for the selected station.

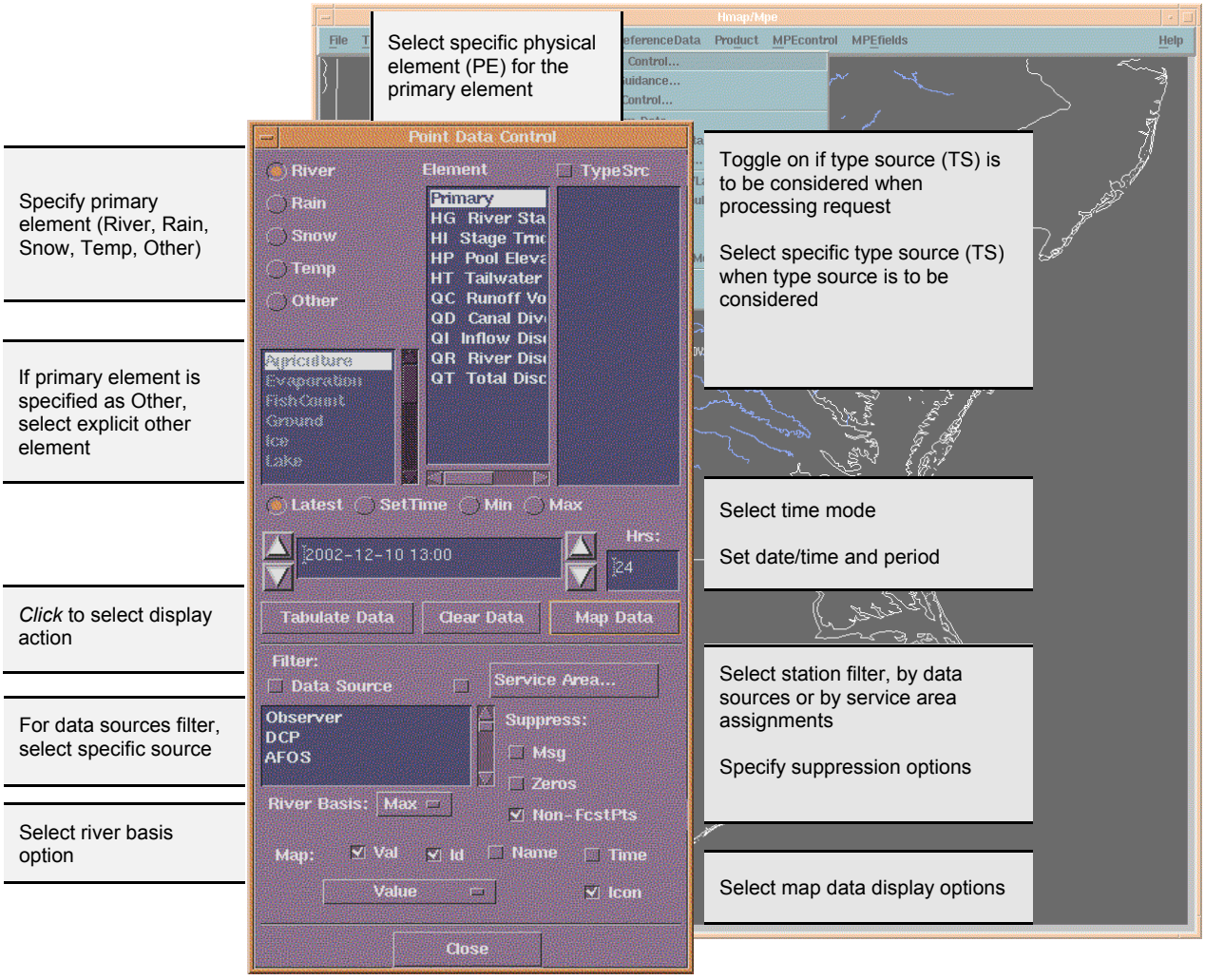
Click on LiveData



Access this selection from the **Root Window** by *Clicking* on **LiveData.**

Notes: **R**ealtime data can be displayed for a selected station in several different formats.

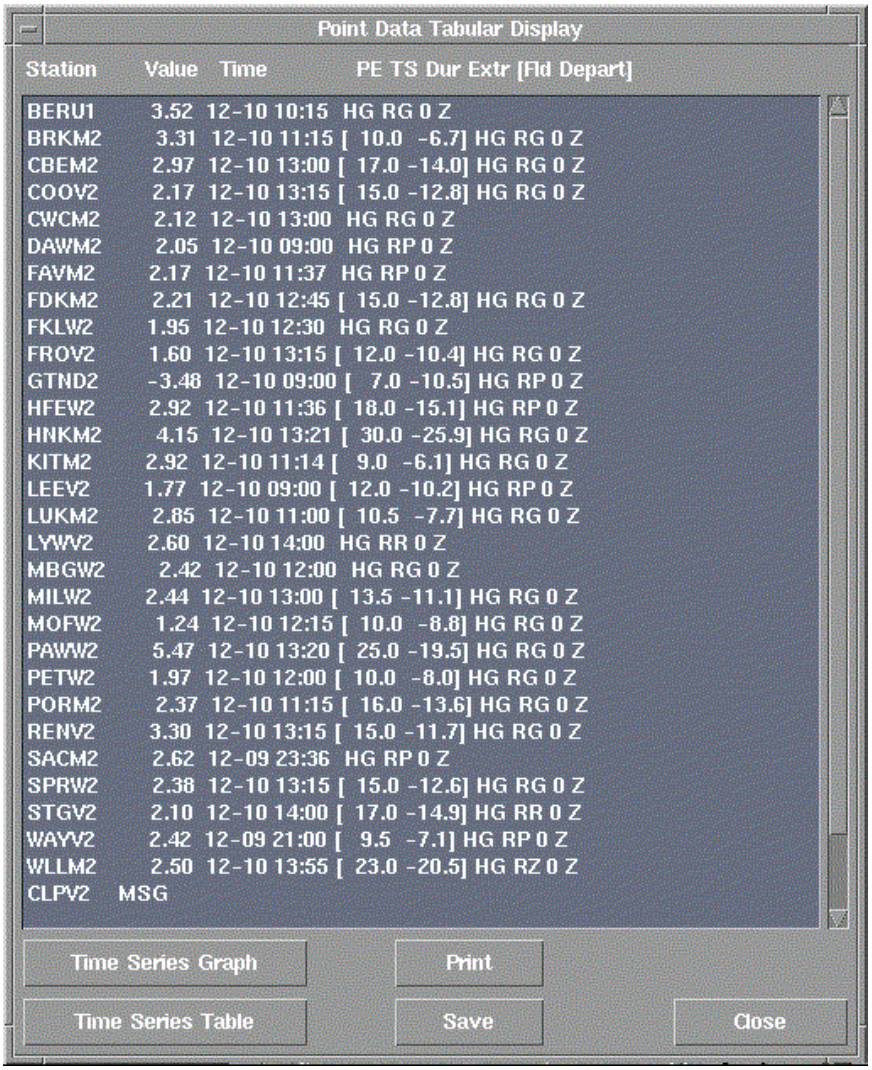
Point Display Control Window - Use this selection to display observed/forecast data on the **Root Window** Geographic Display or in tabular form.



Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Point Display Control**.

Notes: **D**ata can be displayed on the map or in tabular form. Point Data Options can be used to determine retrieval of data. Parts 1 (Data to Use) and 2 (Time Reference) of the window control what data are to be considered for display. Parts 4 and 5 of the window affect how data are filtered and presented to the user. Part 3 (Action) of the window causes data to be displayed on the map or in tabular form or to be cleared. When Clear Data is specified, all of the data will be removed from the map display.
River data displayed can be the latest observed, the maximum forecast, or the maximum of the two.
Precipitation displays can be filtered by suppressing zero or missing values.
BE SURE TO SELECT DATA TO BE DISPLAYED FIRST (parts 1 and 2 of the window).

Point Data Tabular Display Window - Use this option to view observed/forecast data in tabular form.



Access this selection from the **Point Data Control Window** by *Clicking* on **Tabulate Data**.

Flash Flood Guidance Window - Use this selection to display Flash Flood Guidance (FFG) grids at either the WFO or RFC level of spatial resolution.

Select WFO or RFC

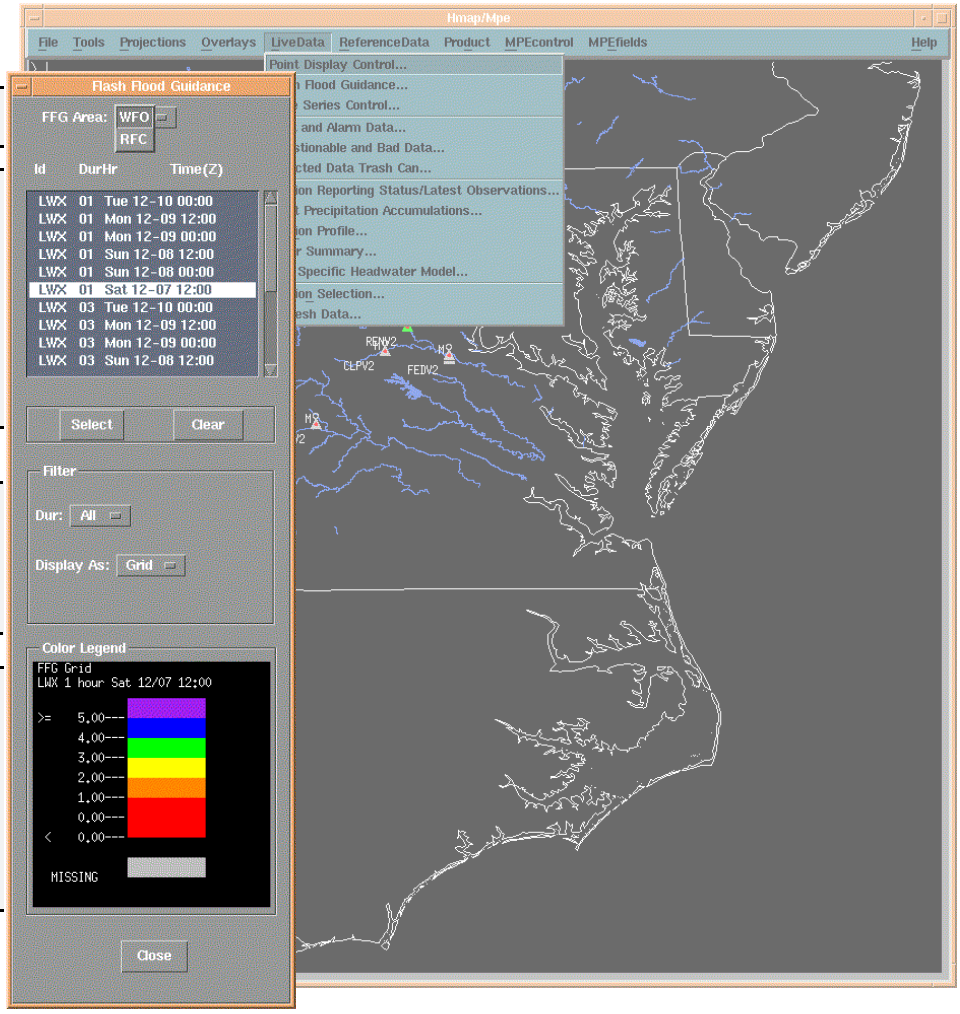
Make selection from available FFG data (double *Click* on item in list box or single *Click* on item and *Click* on Select)

Click on Clear to clear FFG data from the display

Select site (RFC only) and duration filters

Select data display type filter

View legend reflecting time, origin, duration, and color levels of the data chosen for display



Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Flash Flood Guidance**.

Notes:

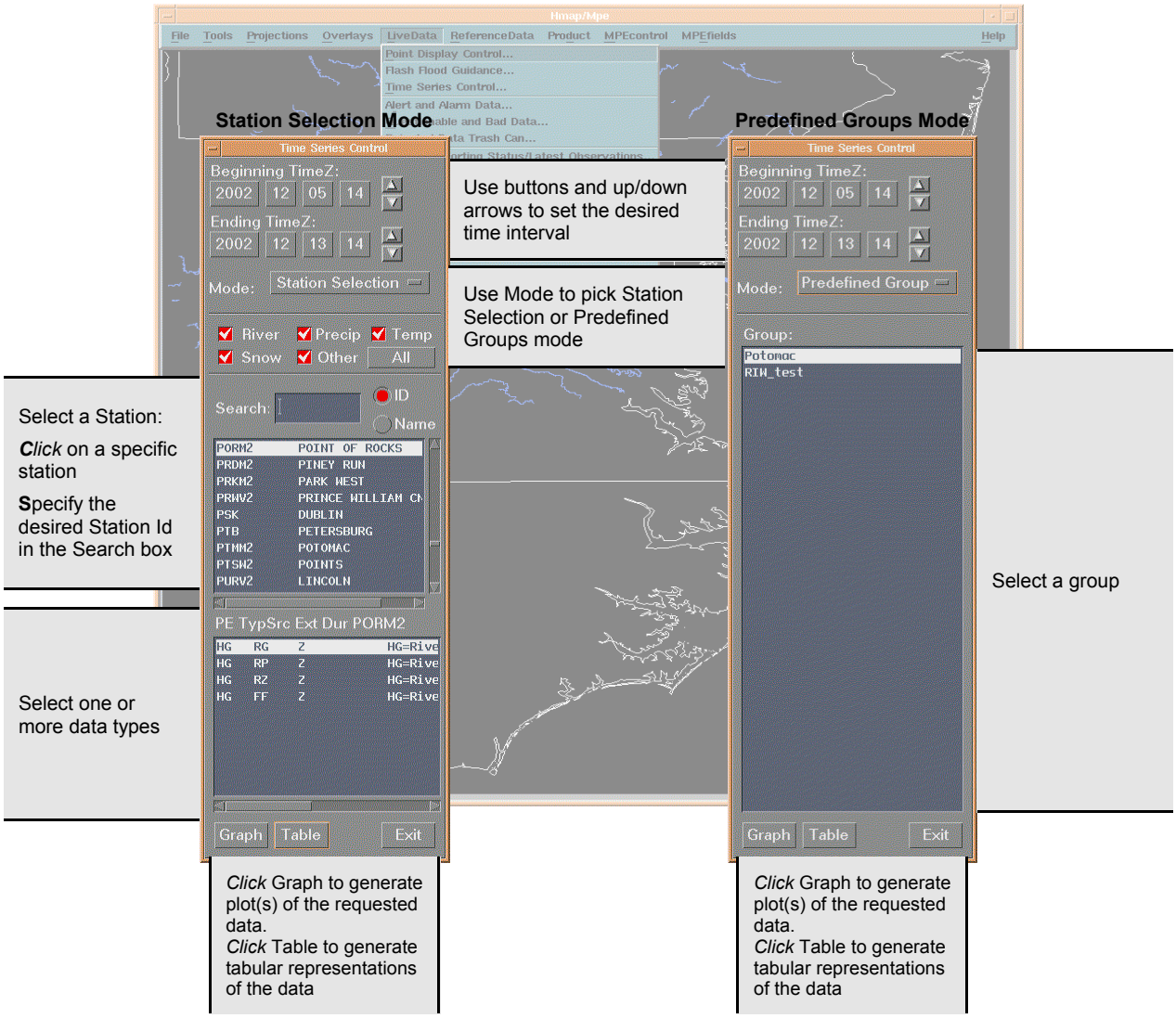
FFG data may be displayed on a HRAP grid or as an averaged value over basins.

The ability to filter by site is available only for RFC FFG fields.

The ability to filter by duration and to display the data as either a HRAP grid or as basin averages is available for both RFC and WFO FFG fields.

When viewing the FFG data as an averaged value of a basin, the basin must be a minimum percentage of HRAP bins containing valid, non-missing FFG values in order for it to be assigned the average of these values; otherwise, the basin will be assigned a color indicating that the data for it is missing.

Time Series Control Window - Use this selection to initiate either graphic or tabular time series data displays for a specifiable time period for either a specified station or a predefined group.



Access this selection from the **Root Window** by Clicking on **LiveData,** then on **Time Series Control**. Alternately, this selection can be accessed using the **Pop Up Menu** in the geographic display (see p. 3-8), by selecting the **Timeseries** option and then *Clicking* with the left mouse button on the station icon.

Notes:

Plot request is defined via the **Time Series Control Window**; the Graph or Table pushbutton is selected to generate and display the time series.

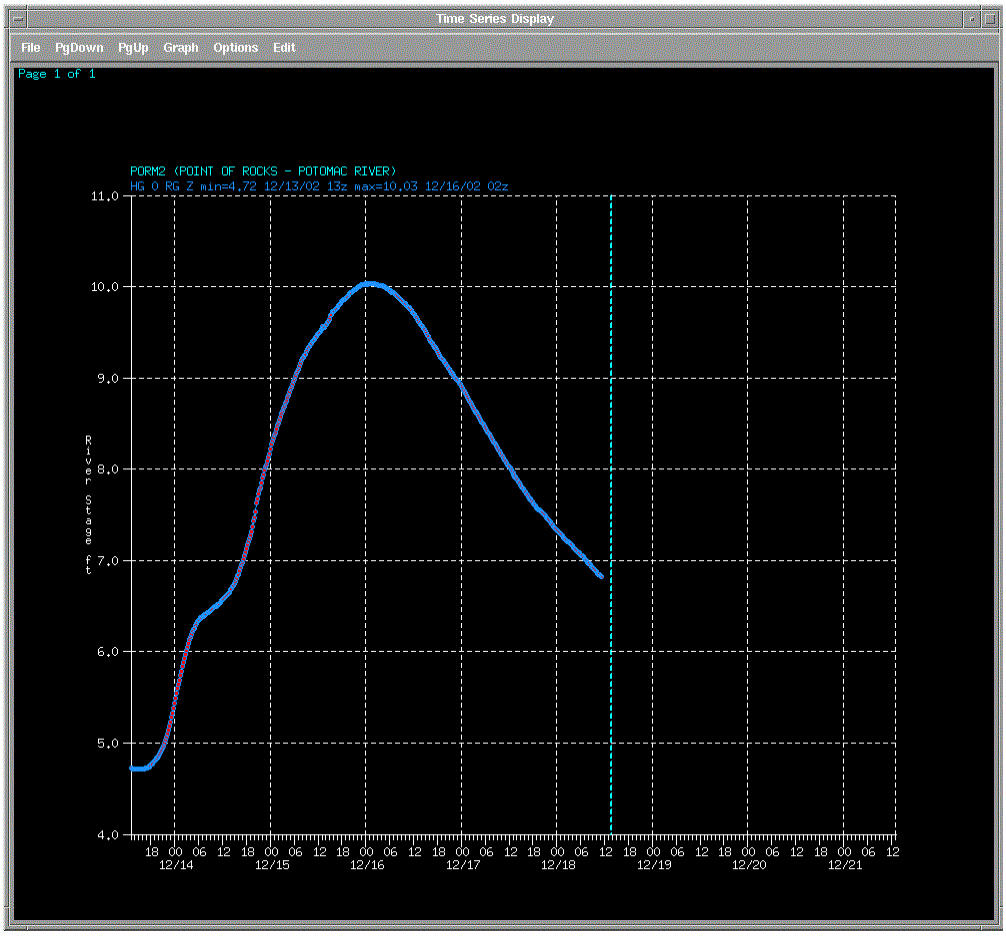
Default time period is 5 days in the past to 3 days in the future, based on current time.

Multiple data types may be specified in Station Selection mode only if they are in the same physical element class. Exceptions: PC and PP may not both be chosen; only one PP data type may be chosen.

See Appendix C for a full discussion of the WHFS Time Series Function.

Graphical Time Series Display Window - Use this window to view the graphical time series representation for the selected station or pre-defined group. (See **Time Series Control Window**, p. 3-20.)

Use the various menu options to view other graphs in the predefined group



Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Time Series Control**, then the **Graph** pushbutton.

Notes: **A**ppendix C contains a full description of the functionality available within the **Time Series Graphical Display Window**.

Tabular Time Series Display Window - Use this window to view the tabular time series representation for the selected station or predefined group and to view, insert, edit, or delete individual values. (See **Time Series Control Window**, p. 3-20.)

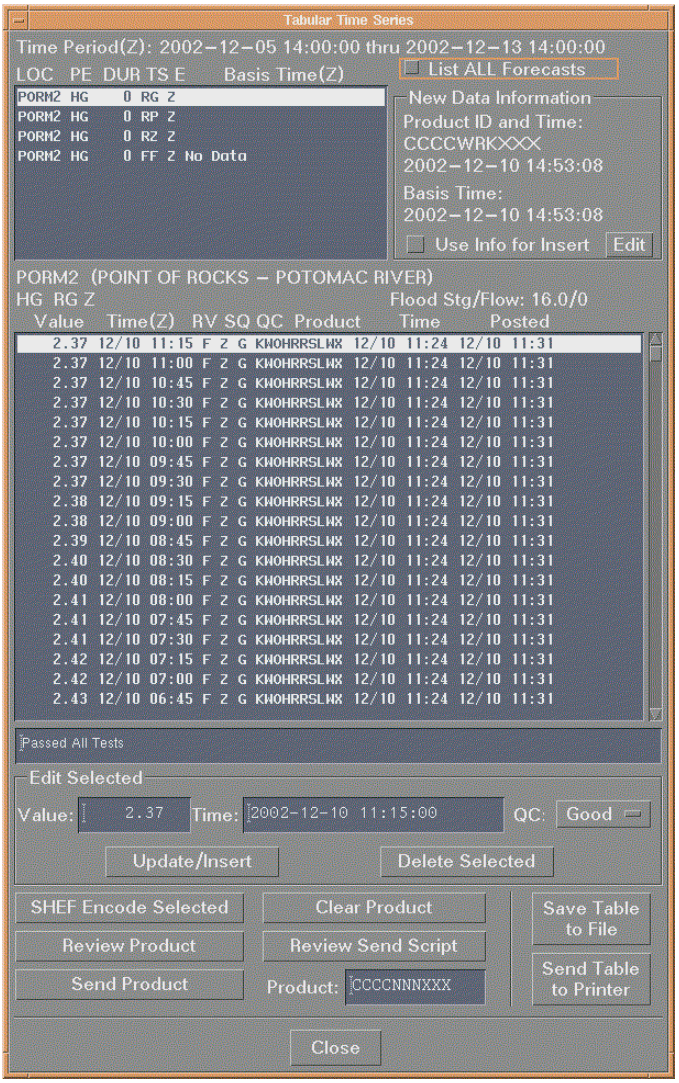
Select a time series type for display below

Time series values for the selected type.

Click on a value and data are displayed below.

Delete or update the selected value OR add a new value to the table

SHEF Encode Section -
Clear product
Build, review, distribute product



Data used for new table value if check box selected

Click Edit to modify these data

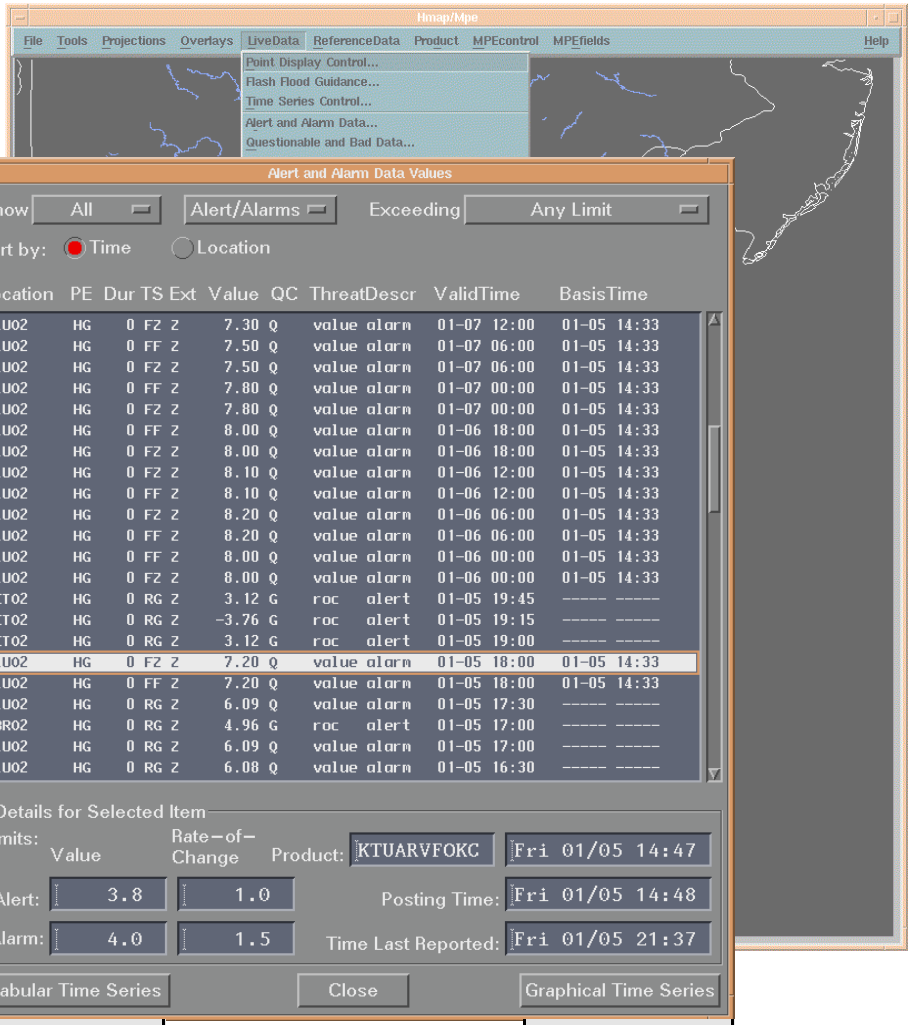
Options to save the time series table to a file or make a hard copy

Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Time Series Control**, then the **Table** pushbutton.

Notes:

Values may be added, edited, or deleted.
Products may be generated, reviewed, distributed, or cleared.
Appendix C contains an in-depth description of all of the functions of the Tabular Time Series.

Alert and Alarm Data Window - Use this selection to display data that have exceeded alert and alarm thresholds based on value and rate-of-change.



Use **Show** options to select displayed data filters
Use **Sort By** options to specify sort order

Click on an item to display preset alert/alarm limits and other details below

Click to activate Tabular Time Series display

Click to activate Graphical Time Series display

Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Alert and Alarm Data**.

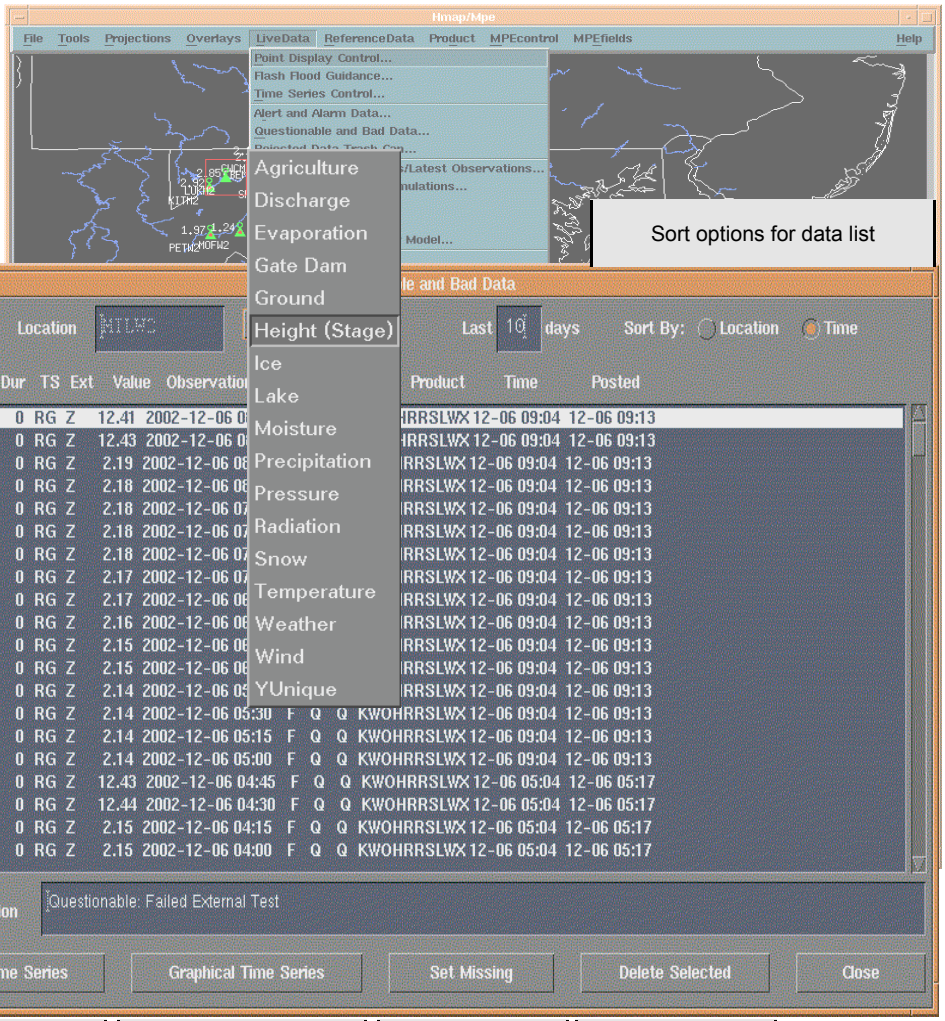
Notes:

Use the **Show** filter options to display only those alert and alarm data records of interest. Options include All, Observed, or Forecast data records; Alerts, Alarms, or both Alert/Alarms data records **Exceeding** Any Limit, Value, or Rate-of-Change (roc).

***C**lick* **Tabular Time Series** or **Graphical Time Series** to view the record within its time series context and edit real time data. Time Series displays and features are shown on pp. 3-20 through 3-22. An in-depth discussion of the time series function is contained in Appendix C.

This display is read-only; changes to data or alert/alarm limits cannot be made.

Questionable and Bad Data Window - Use this selection to display all data that have been marked as questionable or bad by the quality control processes.



Filter data anomalies list by Location and/or by Observation Type pull-down list (default is all locations)

Select number of days back to list

Click on an item above to view quality control data anomaly description

Click to activate Tabular Time Series display

Click to activate Graphical Time Series display

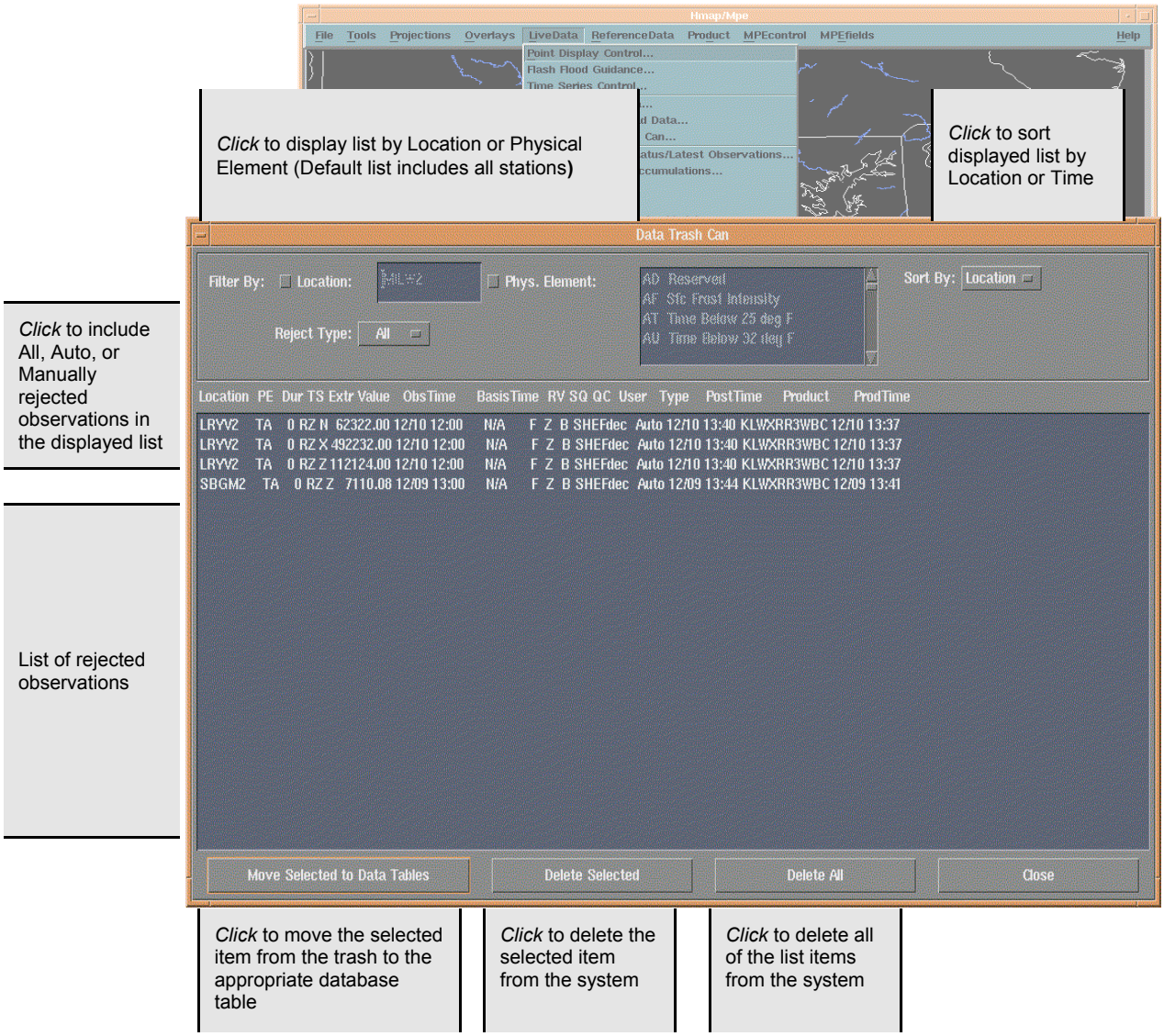
Click to change data from numerical value to missing

Click to delete highlighted data rows

Access this selection from the **Root Window** by *Clicking* on **LiveData,** then on **Questionable and Bad Data**.

Notes: **T**ime Series displays and features are shown on pp. 3-20 through 3-22. An in-depth discussion of the time series function is contained in Appendix C.

Rejected Data Trash Can Window - Use this selection to display manually or automatically rejected observations, move them to data tables, or delete them from the system.



Access this selection from the **Root Window** by *Clicking* on **LiveData,** then on **Rejected Data Trash Can**.

Notes: **D**ata that are not removed or deleted from this list are purged by the system after the retention period (defined through HydroBase) has elapsed.

Station Reporting Status/Latest Observations Window - Use this selection to display the reporting status of all stations in the HSA for all measured parameters.

Click to select list of displayed stations

Click to select station

Detailed information for the latest available data for the selected station

Data codes are as shown in the Standard Hydrometeorological Exchange Format Handbook

Access this selection from the **Root Window** by *Clicking* on **LiveData,** then on **Station Reporting Status/Latest Observations**.

Notes:

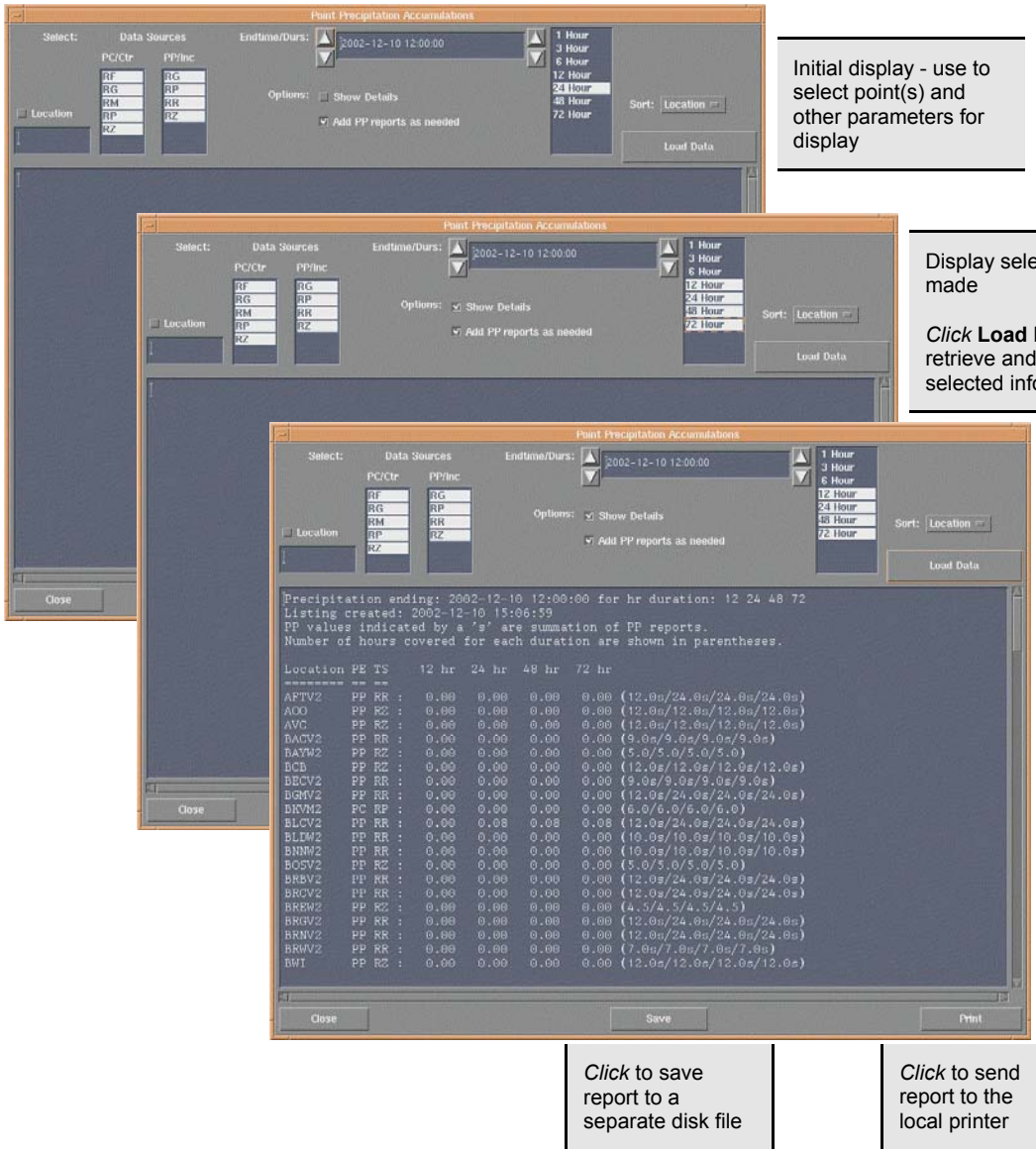
Station List options include - All Locations With Latest Data, Only Locations With Latest Data Older Than [Hours Ago parameter], and Locations Without Any Latest Data.

Hours Ago selection at the top of the window is based on observation time and applies only to Only Locations With Latest Data Older Than option.

Other than setting the Hours Ago parameter, no information or data can be changed in this window.

Use of the Station Reporting Status requires the shef_post_latest token to be set to ON in the /awips/hydroapps/.Apps_defaults_site file.

Point Precipitation Accumulations Window - Use this option to select then display precipitation accumulation information for the selected point.



Initial display - use to select point(s) and other parameters for display

Display selections made

Click **Load Data** to retrieve and display selected information

Information display generated by **Load Data** and selected parameters

Click to save report to a separate disk file

Click to send report to the local printer

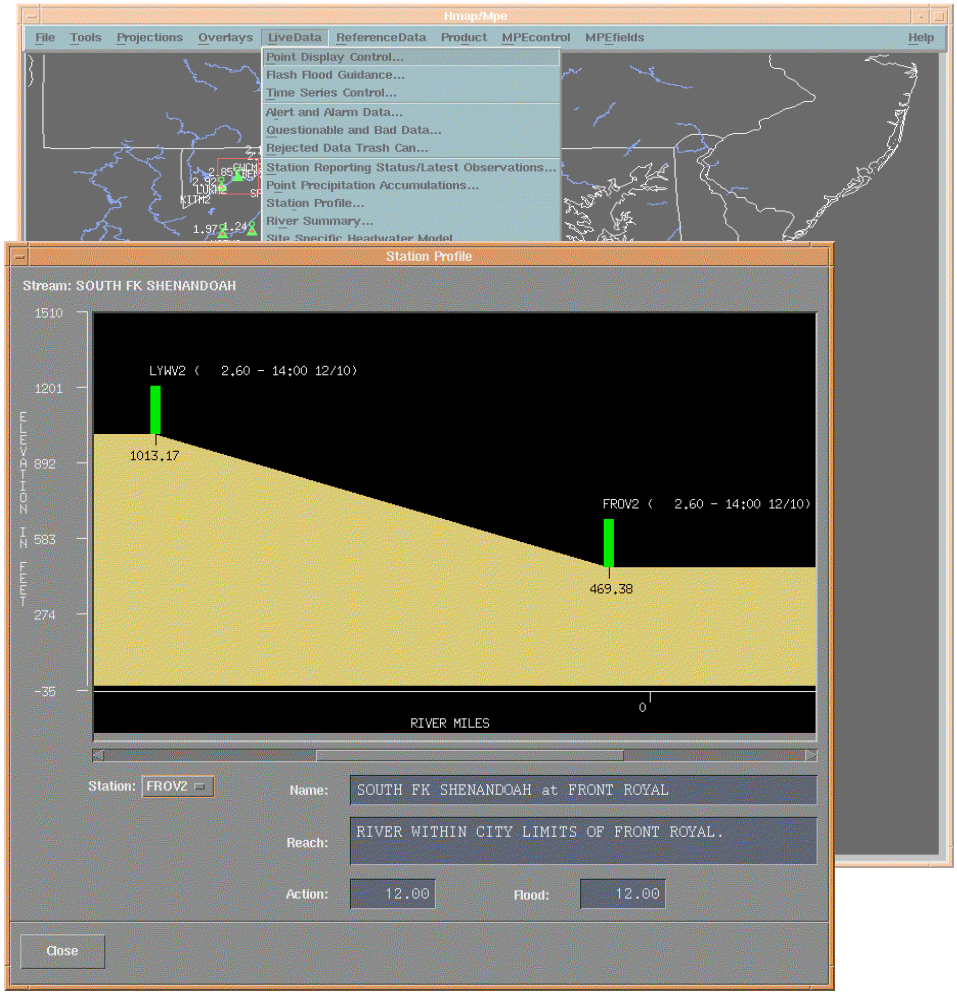
Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Point Precipitation Accumulations**.

Notes:

Specify display and data options, then *Click* **Load Display** to retrieve and display the selected information.

Precipitation data are retrieved and accumulated "on-the-fly" when **Load Display** is *Clicked*, thereby providing up-to-the-minute information for review.

Station Profile Window - Use this selection to display geophysical information and current stage data for the selected station and other stations along the reach.



Station information and data include -

Station ID with latest stage and associated time and date

Color coded stage bar
green = below flood stage
yellow = above action stage
red = above flood stage

Actual elevation (ft, MSL)

Click to select any station along the reach

Information to be displayed for the selected station

Access this selection from the **Root Window** by *Clicking* on **LiveData,** then on **Station Profile**.

Notes: **T**his display is read-only. Changes to data or information cannot be made. **T**he ordinate of the graphical display is feet above mean sea level (MSL), the abscissa is river miles.

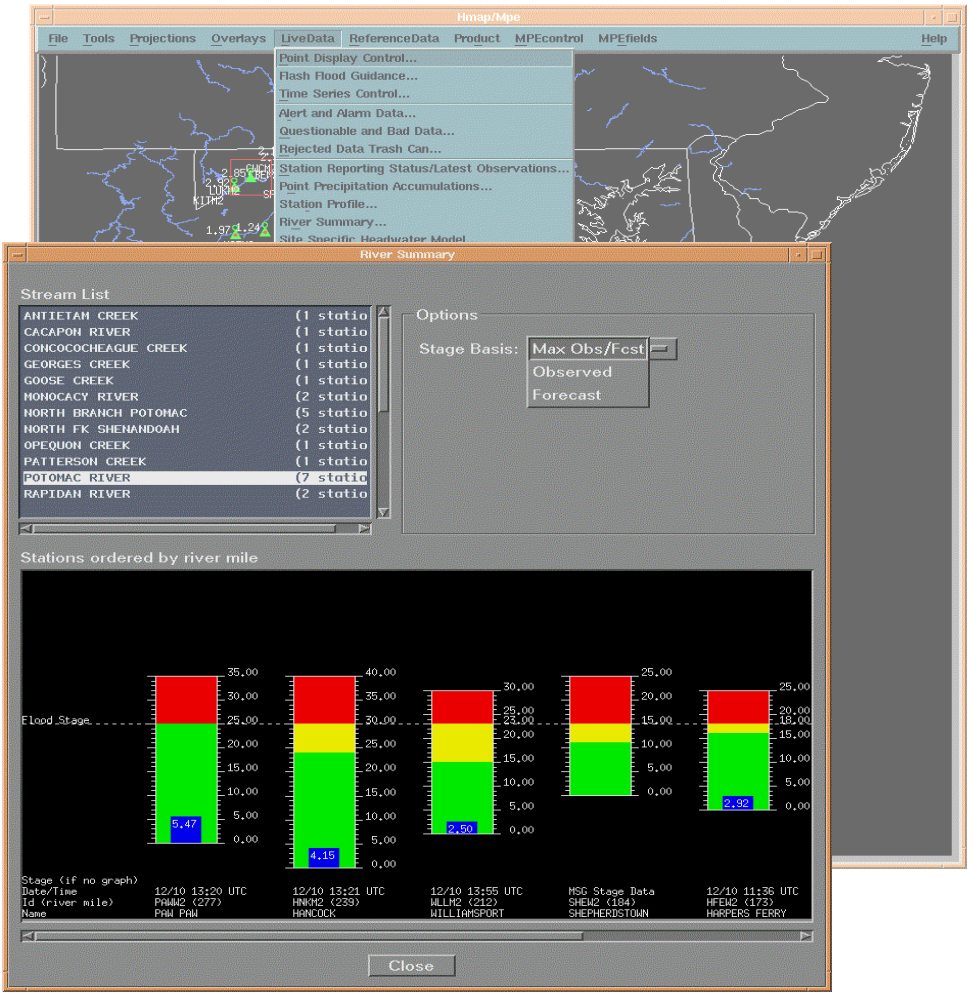
River Summary Window - Use this selection to display currently available stage data for all stations along a selected stream.

Click on stream of interest

Stations indicated will have maximum stage (Current Observed or Maximum Forecast) or Observed only or Forecast only displayed below in graphical form

Stage displayed in graphical form along with reference values (below action stage - green, above action stage - yellow, above flood stage - red)

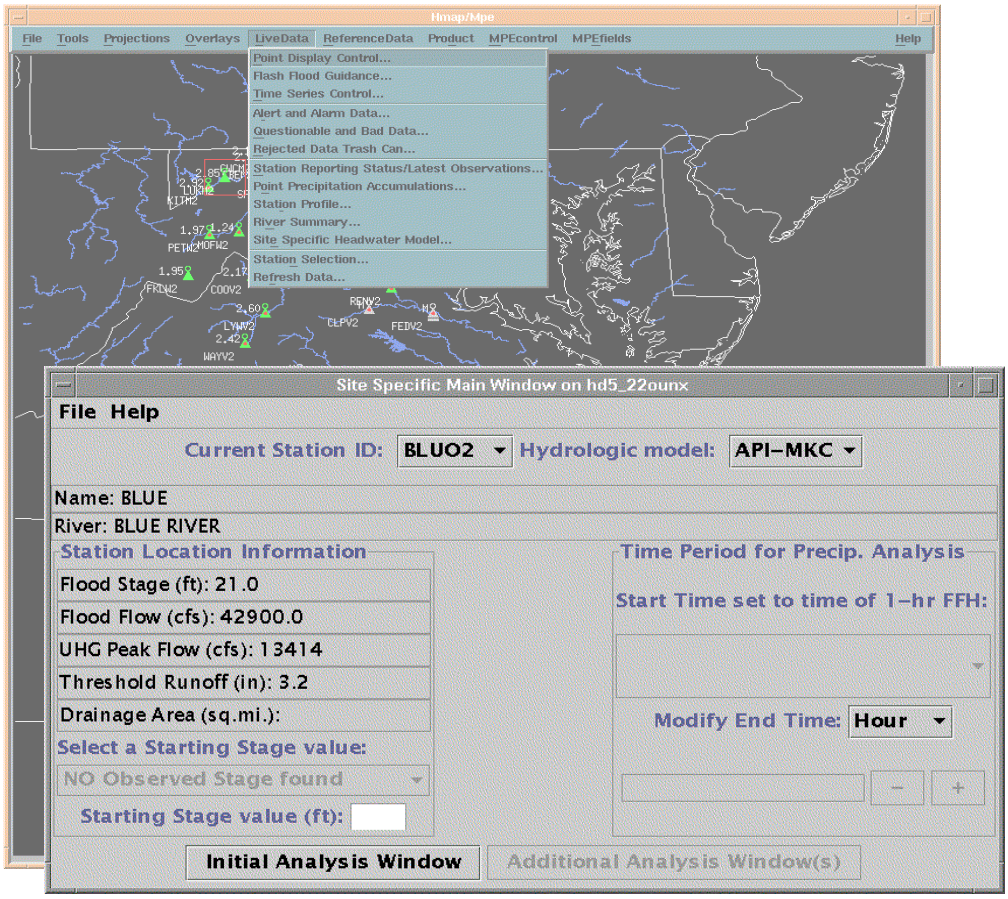
Station identifiers and observation times are listed below the graphic for each station



Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **River Summary.**

Notes: **S**tations are ordered by river mile.
Any missing data are indicated in the Date/Time category below each graphic.

Site Specific Headwater Model Window - Use this selection to run a hydrologic model to generate a river stage forecast based upon observed and forecast rainfall amounts.



Select station ID and hydrologic model to use

Select the start time of the 1-hr Flash Flood Headwater (FFH)

Modify end time by selecting time field to modify and using the "+" and "-" buttons

Click to display graphs and edit hourly rainfall and stage data

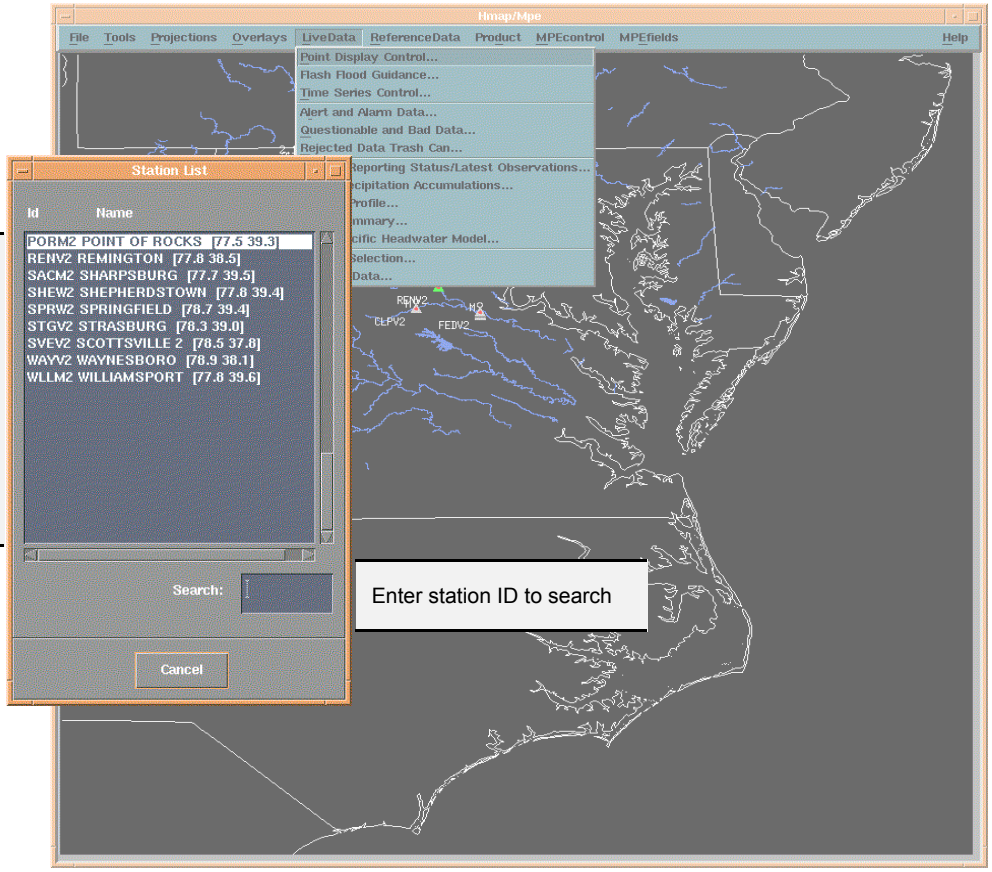
Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Site Specific Headwater Model**.

Notes:

The Site Specific Headwater Model is a stand alone application that allows the user to manipulate the rainfall over the head waters of individual streams and rivers.

The graphs window displayed by *Clicking* on the **Initial Analysis Window** button provides the capability to modify hourly mean areal precipitation amounts, to alter hourly forecast states based on the hydrologic model, and to save changes to the IHFS database.

Station Selection Window - Use this selection to identify a specific station for further data evaluations (e.g., in Live Data, Reference Data, and Products).

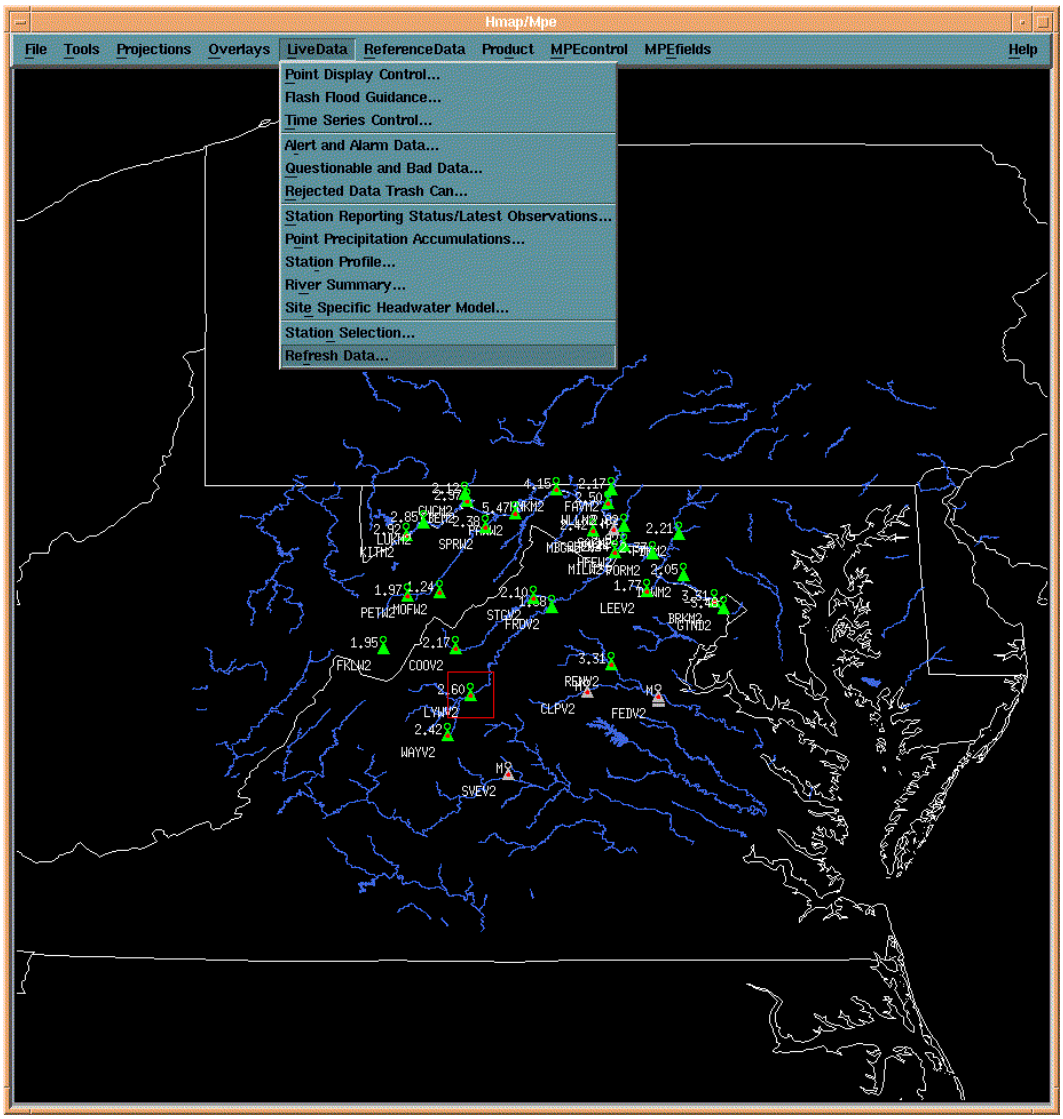


Click to select a station

Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Station Selection**.

Notes: **O**nly a Station ID can be entered in the Search box

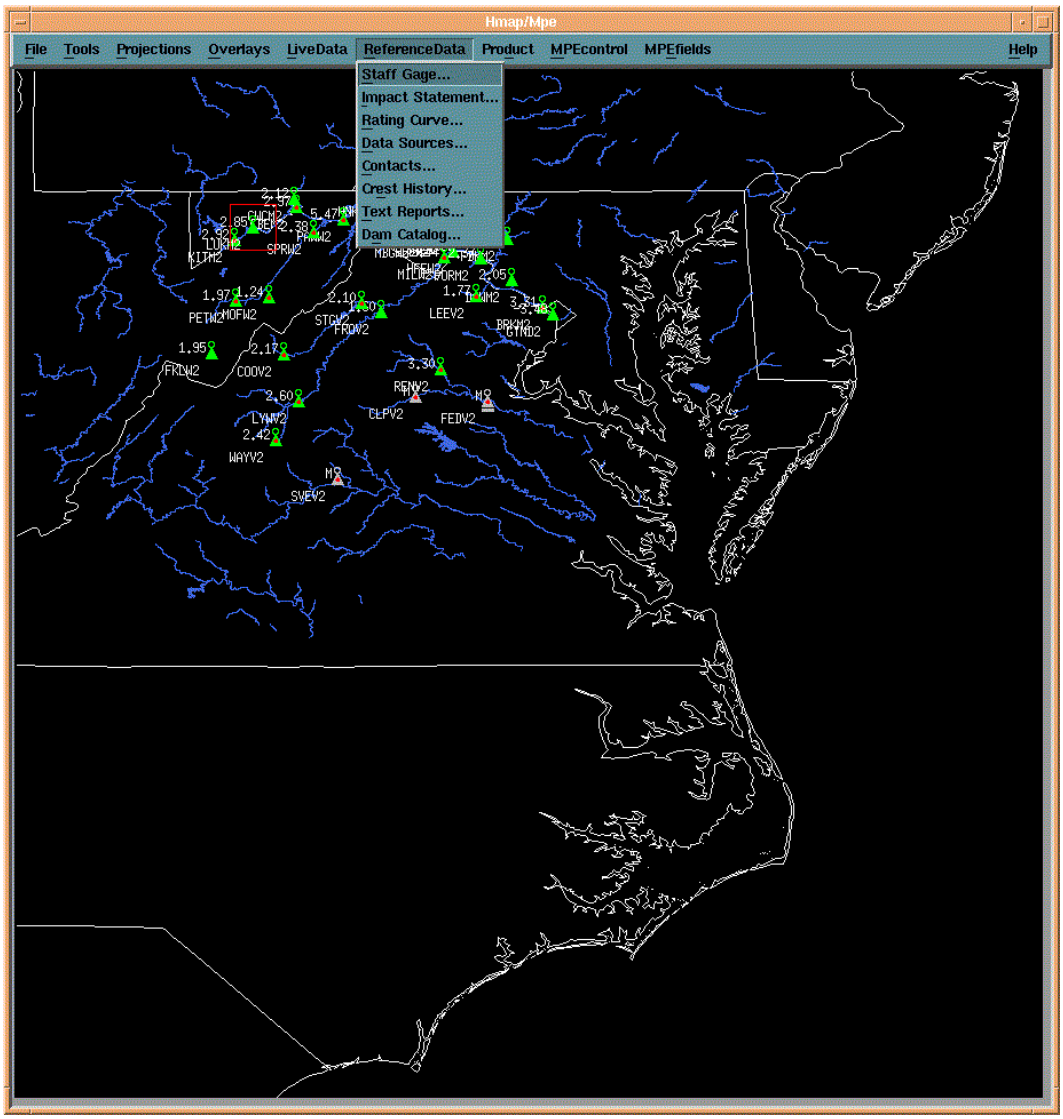
Refresh Data - Use this selection to load the latest available point data for all locations. The system automatically refreshes the display at timed intervals.



Access this selection from the **Root Window** by *Clicking* on **LiveData**, then on **Refresh Data**.

Notes: The interval of the automatic timed refresh is dictated by the hv_refresh_minutes token.

Root Window (Reference Data selected from the MenuBar) - Use this selection to display background information and data for a selected station.



Access this selection from the **Root Window** by *Clicking* on **Reference Data**.

Staff Gage Window - Use this selection to display gage background information for a selected station.

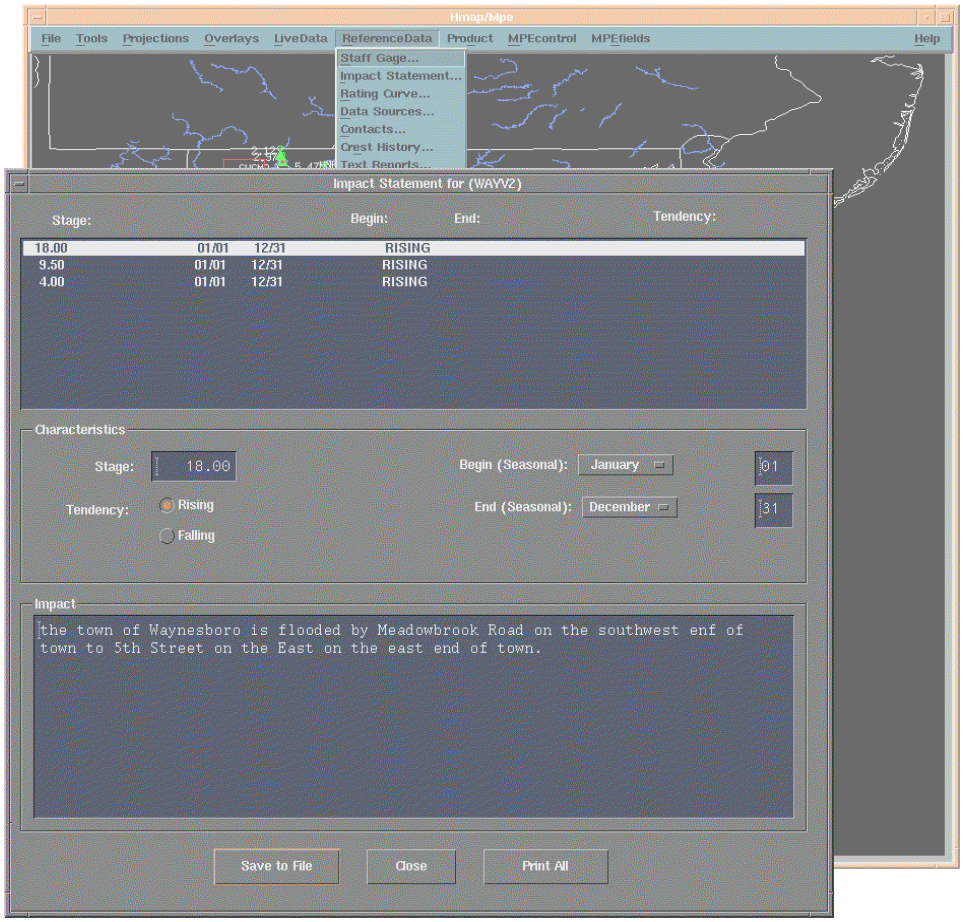
Elevation above mean sea level is displayed on the left of the diagram, stage on the right

Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** then on **Staff Gage**.

Notes:

This display is read-only. Changes to data or information cannot be made.
The stage display is color coded - Red = Above Flood Stage, Yellow = Above Action Stage, Green = Below Action Stage.
Select station in **Geographic Display** or through **Station Selection Window.**

Impact Statement Window - Use this selection to display the impact statements for various stages for a selected station.



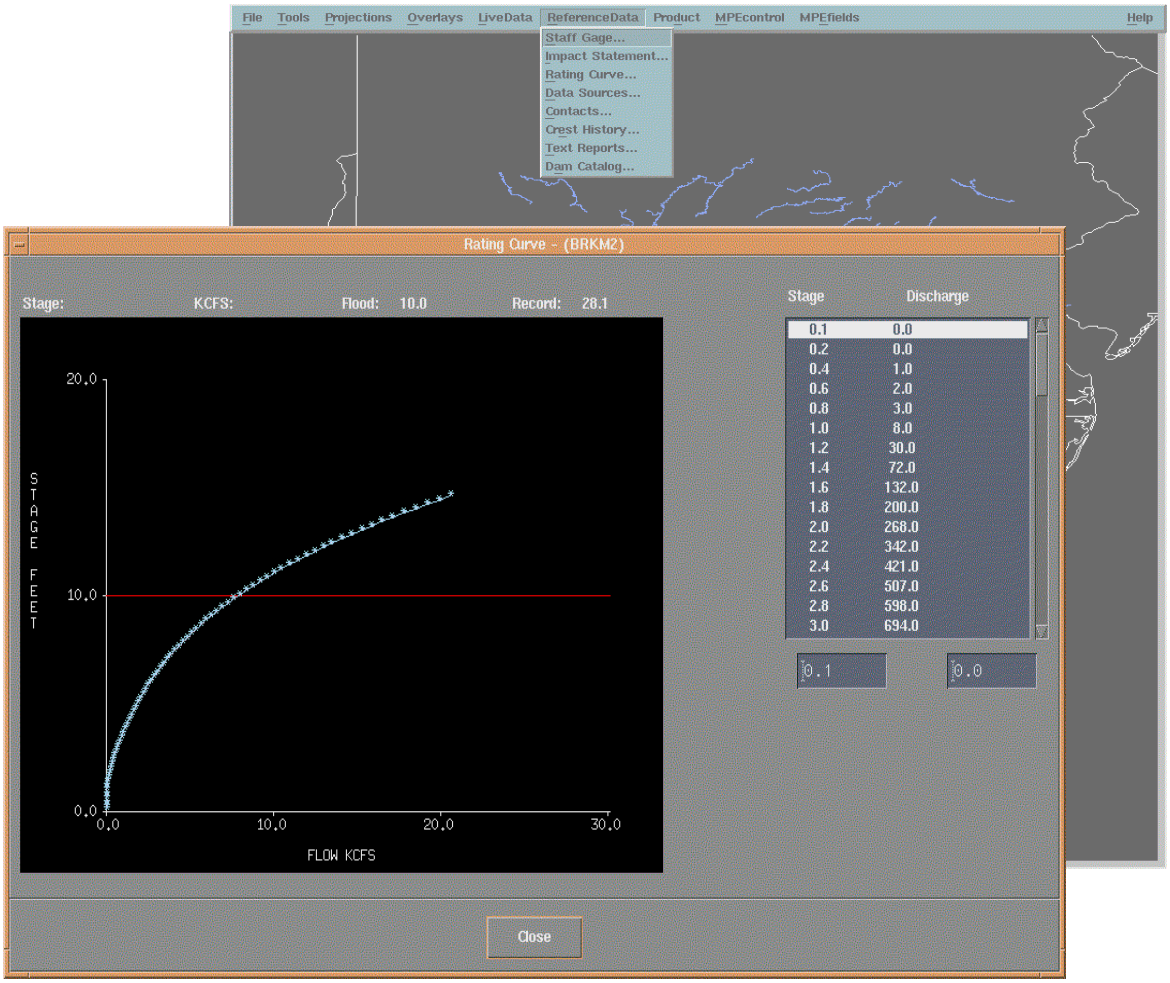
Select a stage to review associated impact statement

Access this selection from the **Root Window** by *Clicking* on **ReferenceData**, then on **Impact Statement**.

Notes:

This display is read-only. Changes to data or information cannot be made.
Select station in **Geographic Display** or through **Station Selection Window.**
Default seasonal display is January - December, however there may be specific seasonal impact statements if flooding affects certain locations such as recreation areas.

Rating Curve Window - Use this selection to display the rating curve for a selected station.



Access this selection from the **Root Window** by *Clicking* on **ReferenceData**, then on **Rating Curve.**

Notes:

This display is read-only. Changes to data or information cannot be made.
Select station in **Geographic Display** or through **Station Selection Window**.
Raw data used in generating the curve are displayed on the right.
Record flood level will be shown with a blue horizontal line, flood stage will be shown with a red horizontal line.
C*licking* on the graph display will produce crosshairs to aid in reading the curve - flow and stage values corresponding to the crosshair location are shown at the top.

Data Sources Window - Use this selection to display information on data sources (e.g., observers) for a selected station. Screens for DCP, Observer, and Telemetry are shown.

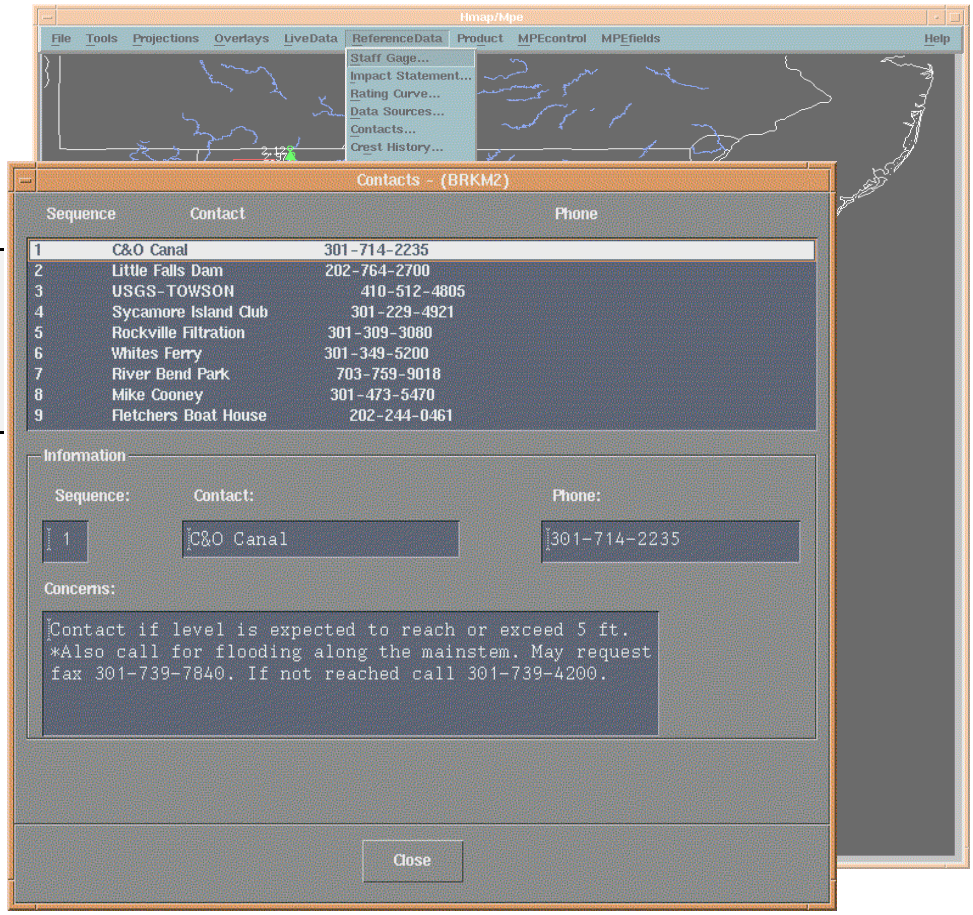
Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** then on **Data Sources.**

Notes:

Select DCP, Observer, or Telemetry to view corresponding information.
These displays are read-only. Changes to data or information cannot be made.
Select station in **Geographic Display** or through **Station Selection Window.**

Contacts Window - Use this selection to display background information (e.g., telephone numbers) for the contact(s) for a selected station.

Click on a contact name to display information (as shown below)

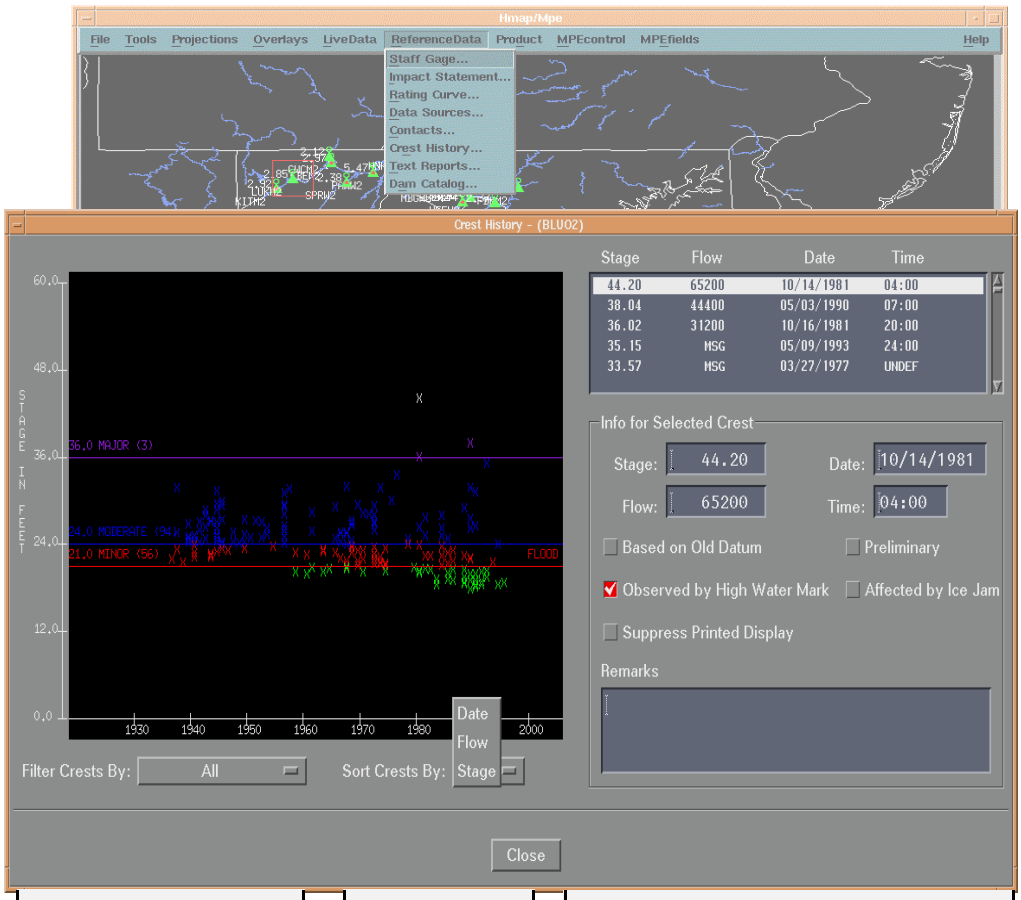


Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** then on **Contacts.**

Notes:

This display is read-only. Changes to data or information cannot be made.
Contacts are listed in order of importance.
Select station in **Geographic Display** or through **Station Selection Window.**

Crest History Window - Use this selection to display data and information for historical crests for a selected station.



Historical crest data can be viewed graphically or in tabular form (far right portion of the window)

A stage highlighted in the tabular section will also be highlighted on the graph

Horizontal lines and data point colors on the graph indicate - major flood (purple), moderate flood (blue), minor flood (red) and action level (yellow)

Filter options include All (all data points displayed), Above Action Stage (only data points above the action level are displayed), Below Action Stage (only data points below the action level are

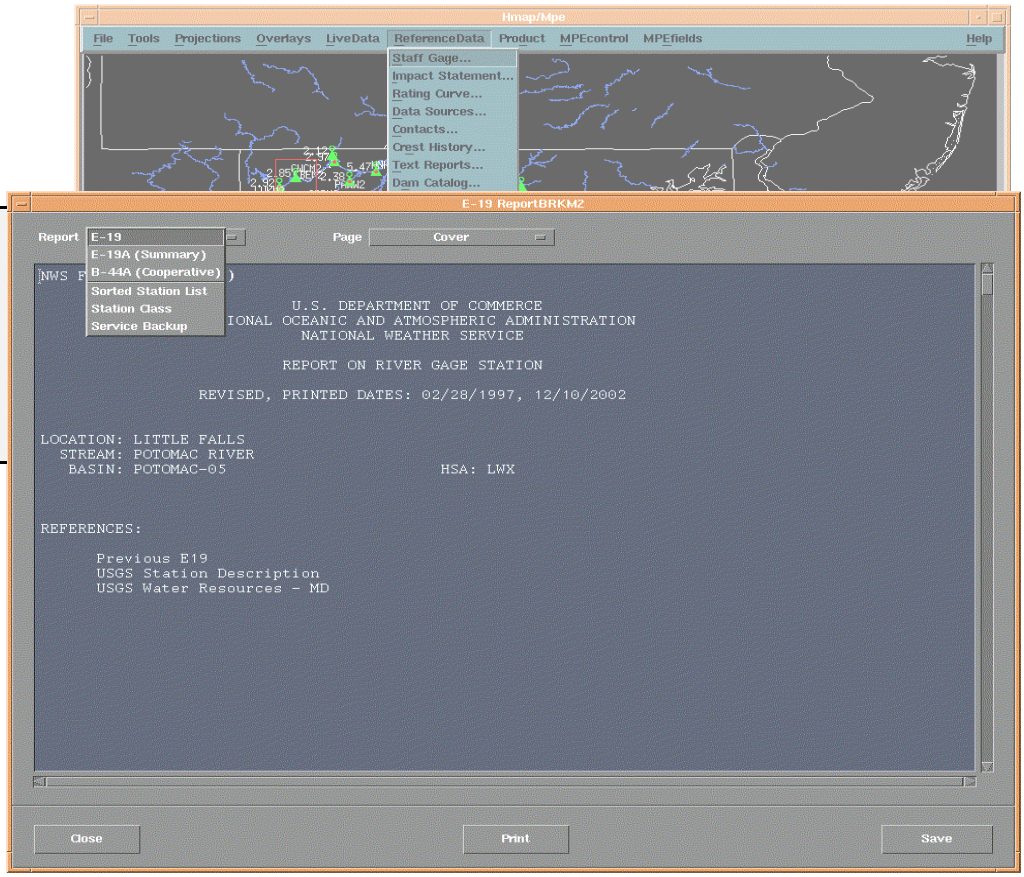
Tabular data (above right) sort options include by Date, Flow, or Stage

Observation basis definitions - Old Datum (based on different input data), High Water Mark (based on observed data from a high water mark), Ice Jam (based on a crest as a result of an ice jam), Preliminary (crest not verified), Suppress Printed Display (data are suppressed in the HydroBase Text Reports E-19 crest history printout)

Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** then on **Crest History.**

Notes: **T**his display is read-only. Changes to data or information cannot be made. **S**elect station in **Geographic Display** or through **Station Selection Window.**

Text Reports Window - Use this selection to generate, print, and save to a file predefined reports and lists.



Select E-19 report, E-19A (Summary) report, B-44A (Cooperative) report, sorted list of stations, list of station class information, or sorted list of service backup information

Click on Print to print displayed report or list

Click on Save to save displayed report or list to a file

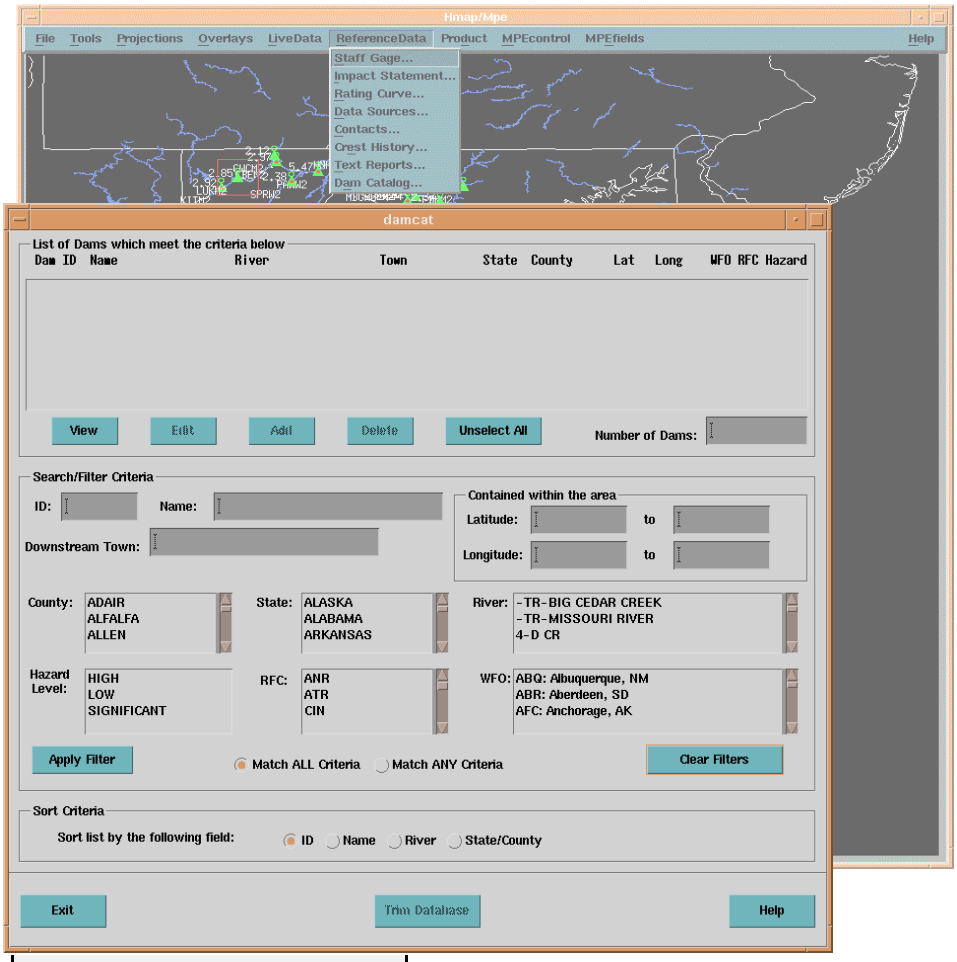
Access this selection from the **Root Window** by clicking on **ReferenceData**, then on **Text Reports**.

Notes:

Sorting options are available only for the Sorted Station List and the Service Backup List. The list of stations may be sorted by location identifier, location name, county, basin or observer. The service backup list may be sorted by station identifier, WFO, primary backup or secondary backup.

For the E-19 report, there is a Page option menu button that allows quick access to a large number of sections of the report.

Dam Catalog Window - Use this selection to display information on dams within the HSA. The initial dam catalog window (damcat) is displayed below.



Use Search/Filter Criteria to select dam(s) to view - General Information, Physical Dimensions, Reservoir and Agency Information, and Dam Break Information (model output)

Select the required search criteria, then *Click* Apply Filter; he dam(s) that meet the criteria will be displayed above

Click on Exit to close. A dialogue box will appear, Click Accept to Exit.

Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** on **Dam Catalog,** then on **OK** in the **Running Dam Catalog Dialogue Box .**

Notes:

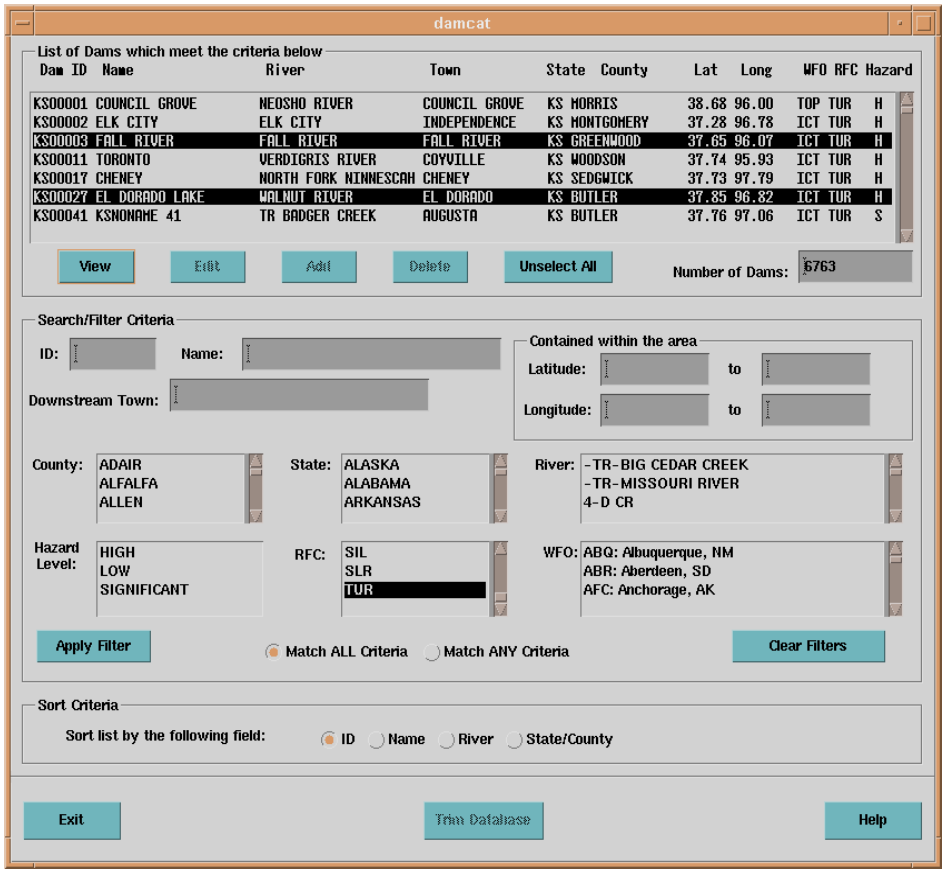
Since the dam catalog contains available data for a large number of dams, the Search/Filter criteria must be used to limit the dams listed (be prepared for a delay when using the Search/Filter because of the size of the data file).
An example of a list of dams selected using the Search/Filter criteria is shown on the following page.
Buttons that are grayed-out are only active in HydroBase.

Dam Catalog Window (List of Selected Dams) - Displayed below is an example list of dams generated after using Search/Filter Criteria.

Click on dams of interest and then on View to review General Information, Physical Dimensions, Reservoir or Agency Information, and Dam Break Information

Select multiple dams by holding down the 'Ctrl' keyboard button

Use Sort Criteria to sort the displayed list of dams



Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** then on **Dam Catalog** (use the Sort/Filter Criteria to display a list of dam(s))**.**

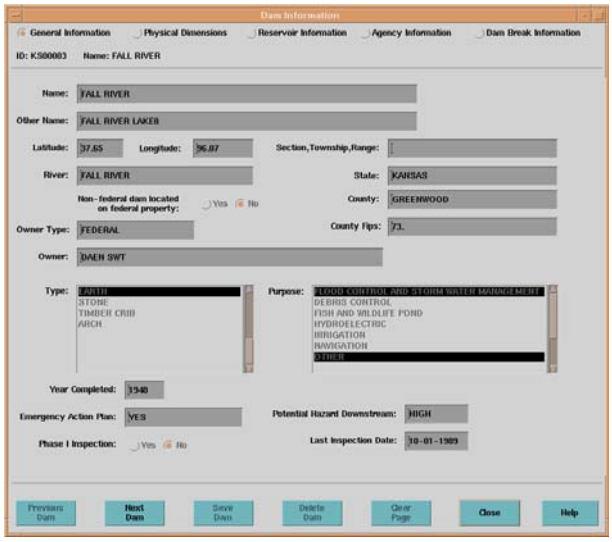
Notes:

Examples of data and information provided for each selected dam are shown on the following pages.

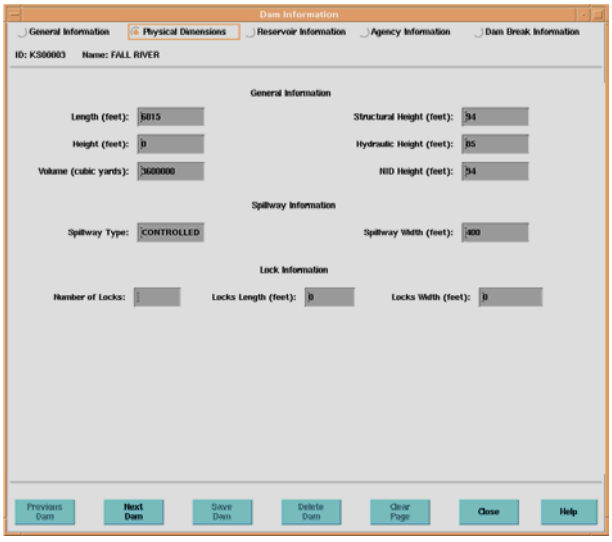
A list of **Dam Catalog Field Definitions** (used in this window and in dam information windows on the following page) is provided in Appendix B.

Buttons that are grayed-out are only active in HydroBase.

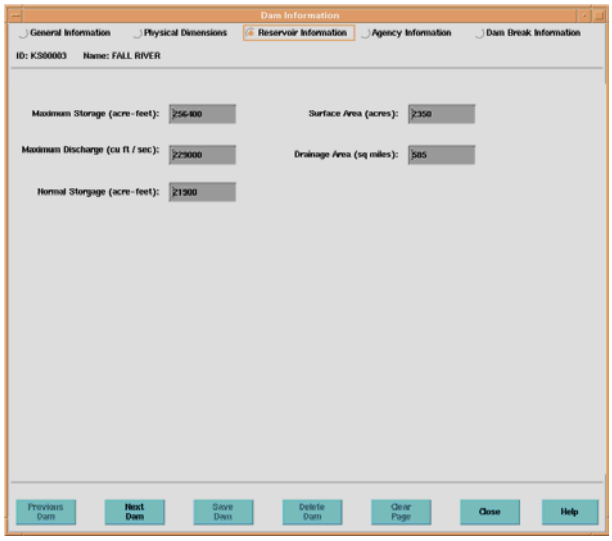
Dam Catalog Window (Information Examples) - Displayed below are examples of data and information available through Dam Catalog.



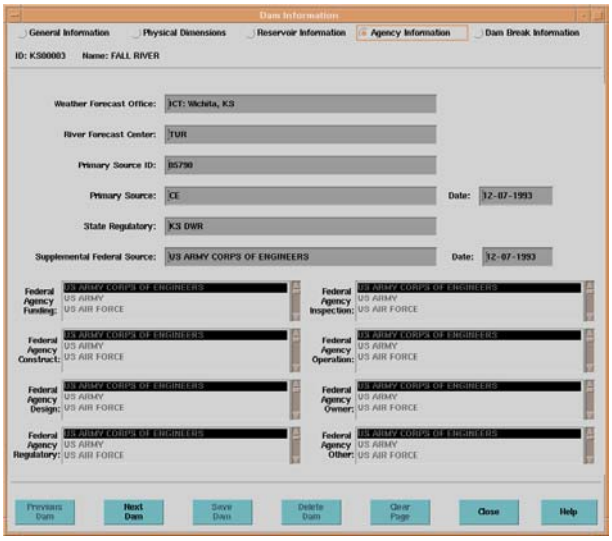
General Information



Physical Dimensions



Reservoir Information



Agency Information

Access these selections from the **Root Window** by *Clicking* on **ReferenceData,** then on **Dam Catalog,** select the dam(s) of interest (see previous page) and *Click* on **View.**

Notes: **T**he General Information screen will always be displayed first, for other selections, *Click* appropriate button across the top of the screen.
Buttons that are grayed-out are only active in HydroBase.

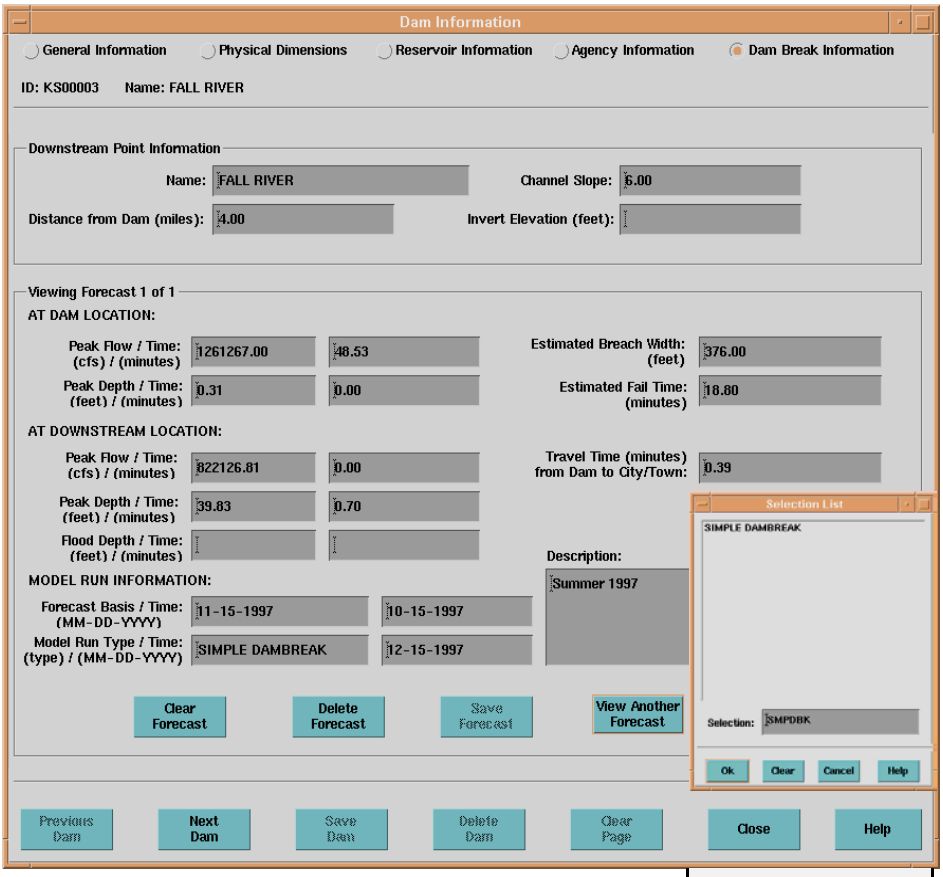
Dam Catalog Window (Dam Break Information Example) - Displayed below is an example of dam break forecast data and information available through Dam Catalog

Downstream information

Dam break forecast information, based on model output

Click on View Another Forecast to see model output results from different model runs or different models, if available

When *Clicking* on View Another Forecast, the dialogue box shown at the right will appear and other model options can be selected



Dam break forecast selection dialogue box (above)

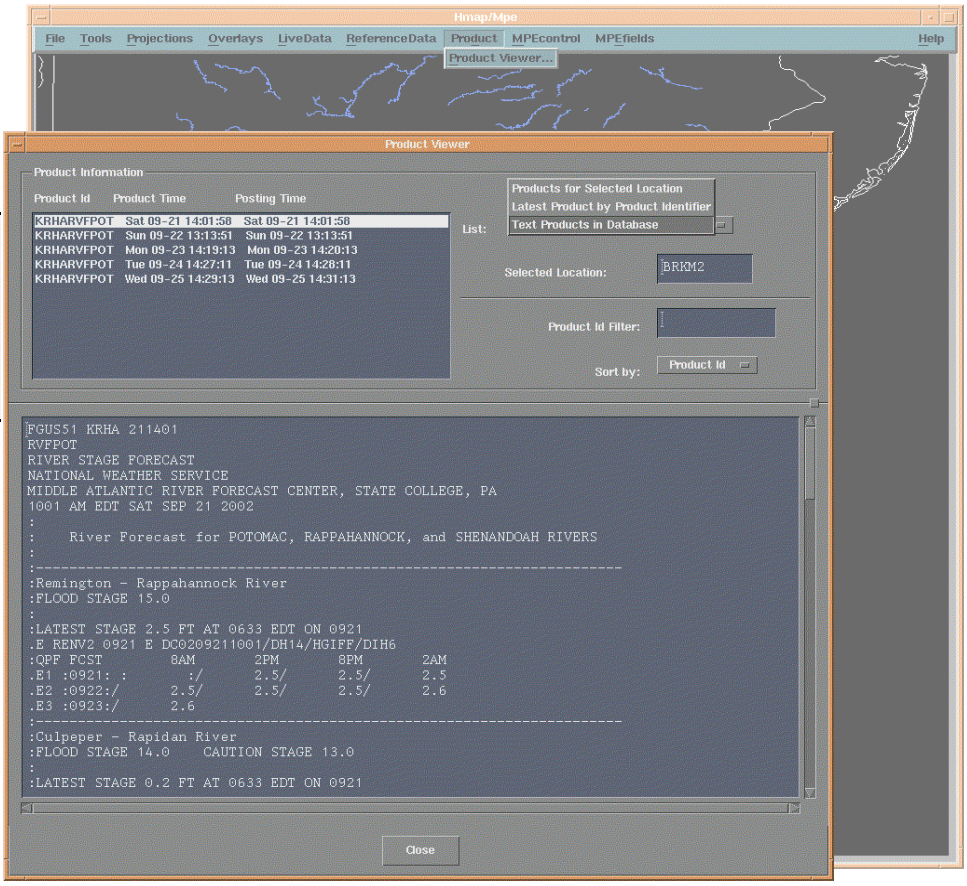
Access this selection from the **Root Window** by *Clicking* on **ReferenceData,** then on **Dam Catalog,** select the dam(s) of interest (see previous pages) and *Click* on **View,** then on **Dam Break Information.**

Notes: **S**imple Dambreak is set as the default model for dam break forecasts.
Buttons that are grayed-out are only active in HydroBase.

Product Viewer Window - Use this selection to display various current and past issued products in the database (e.g., river statement, flood warning, RR1).

Click to select the product to display below (based on the product type selected in **List:**

Default is Products for Selected Location

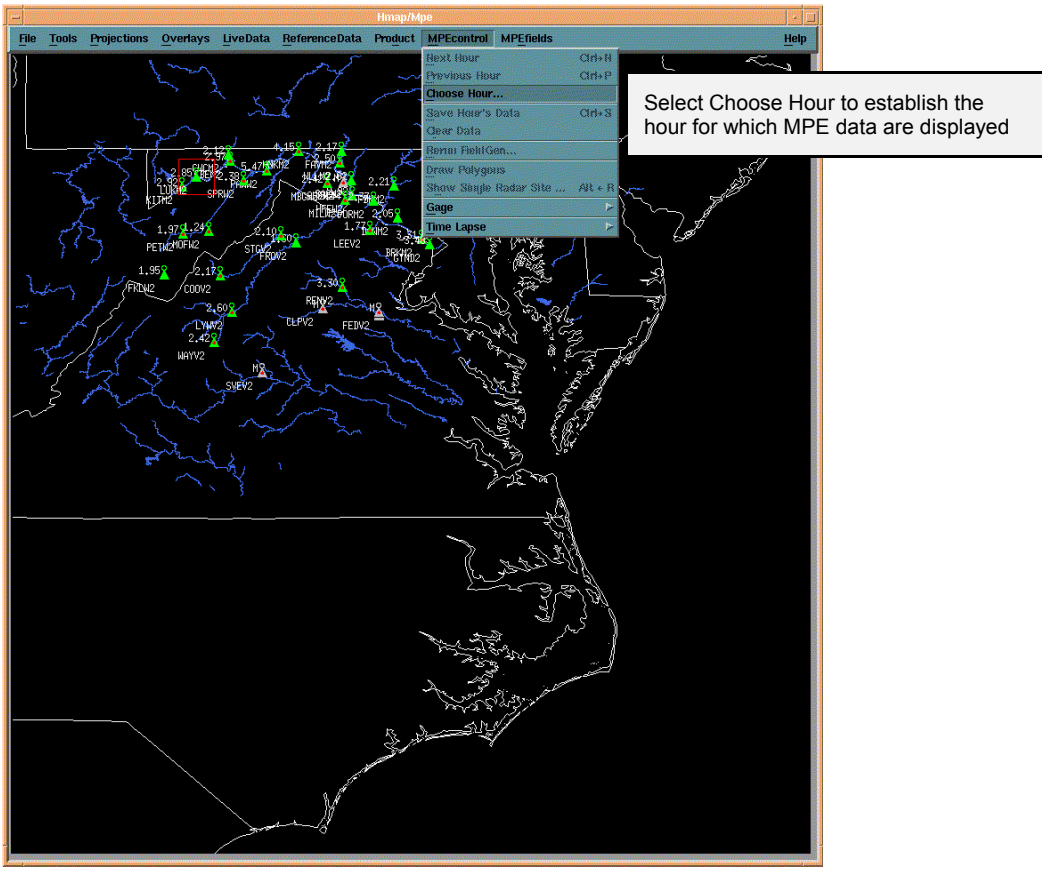


Access this selection from the **Root Window** by *Clicking* on **Product**, then on **Product Viewer.**

Notes:

This display is read-only. Changes to data or information cannot be made.
Products can be sorted by ID, product time, or posting time.
Use of the Product Viewer requires the shef_storetext token to be set to ON in the /awips/hydroapps/.Apps_defaults_site file.
The number of versions of a specific product to be retained is defined in the HydroBase Data Ingest/Purge Parameters menu option. A product with 0 versions retained will not be able to be displayed in the Product Viewer.
Product Id Filter can be used to filter the Product Information list - type in the exact Product ID to sort by (e.g., RVS, OKCRR1OKC), then *Click* on Product ID in the **Sort by:** box.
Select station in **Geographic Display** or through **Station Selection Window.**

Root Window (MPE Control selected from Menu Bar while in HydroView Mode) - Use this selection to turn on MPE mode.



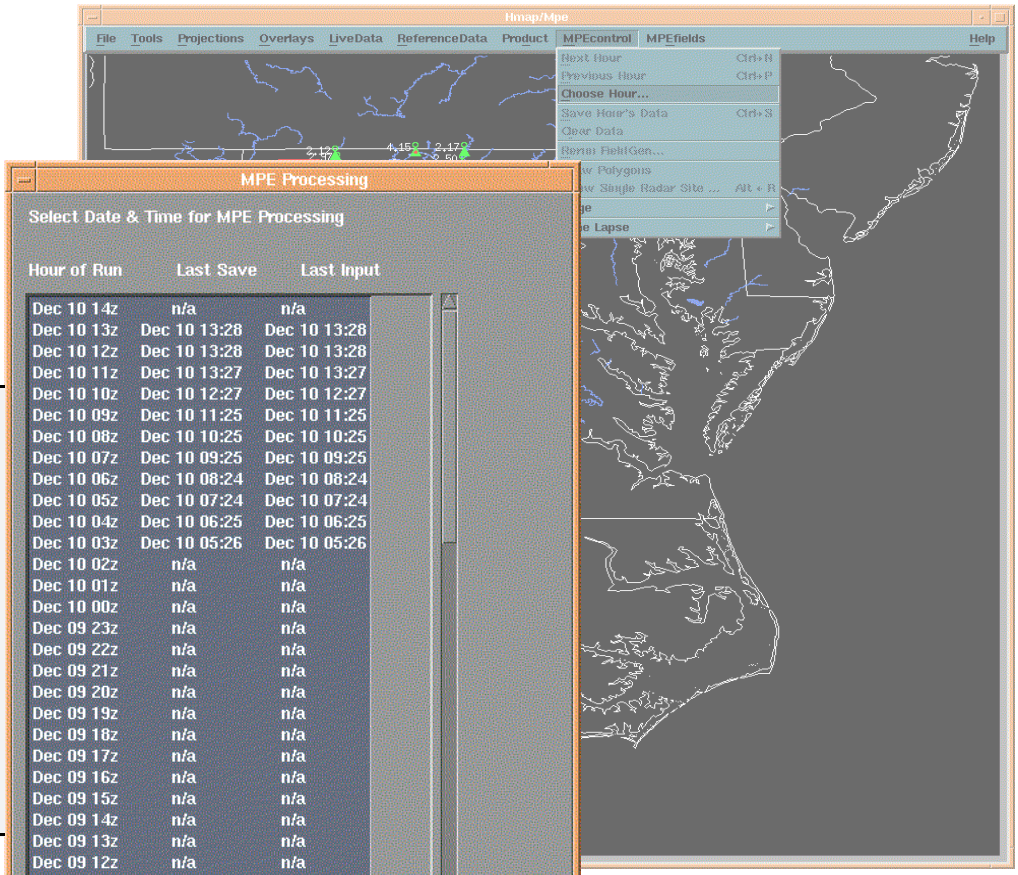
Access this selection from the **Root Window** by *Clicking* on **MPEcontrol** when the Geographic Display is in HydroView mode.

Notes:

The user must open the **MPEcontrol** menu and select **Choose Hour** in order to display MPE data on the Geographic Display. Until an hour for which to display MPE data is chosen, the Geographic Display is in standard HydroView mode, and all menu options for MPE-relevant controls and subwindows are disabled and inaccessible.

Once an MPE data hour has been chosen, the Geographic Display remains in MPE mode until returned to HydroView mode by selecting **Clear Data** on the **MPEcontrol** menu.

MPE Data Hour Selection Window - Use this option to select a date and time for which to display an hour's worth of MPE data.



Click on row to select date/time of hour to display

Click OK to display data

Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Choose Hour**.

Notes:

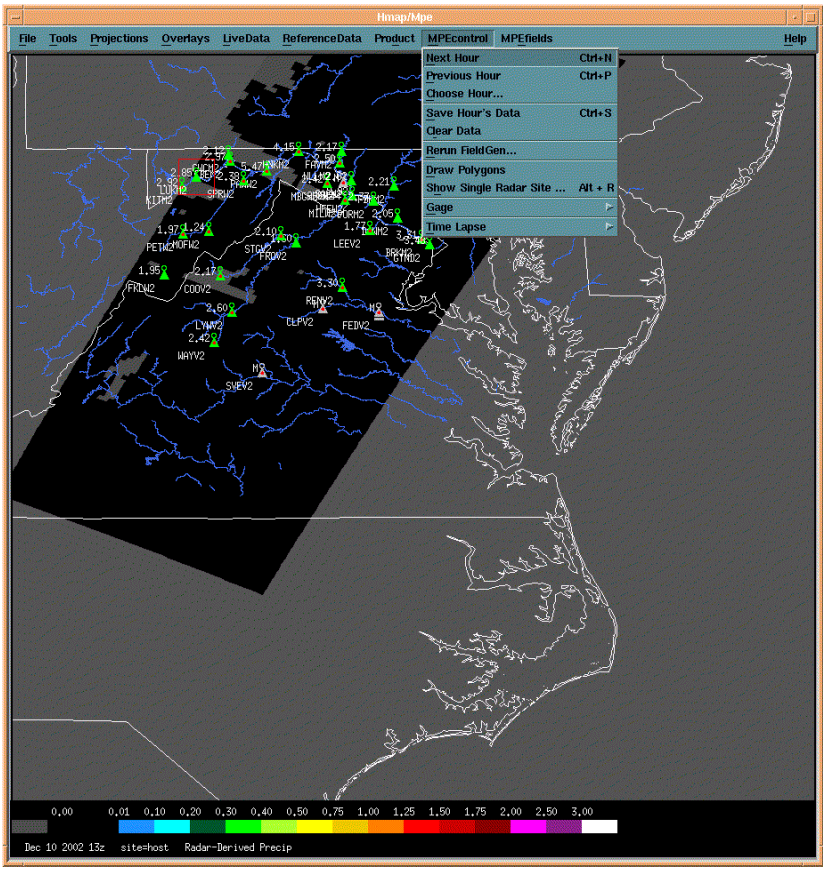
The **Hour of Run** column lists hours available to be selected for MPE processing. The date/hour specified is the end of an hourly period of rainfall accumulation.

The **Last Saved** column shows the last time a data field was saved for the hour. If "n/a" is displayed, a data field has not previously been saved for the hour.

The **Last Input** column shows the last hour that the MPE FieldGen process was run for the hour. If "n/a" is displayed, a FieldGen run for the hour has not yet been done.

Times displayed are GMT.

Root Window (MPE Control selected from Menu Bar while in MPE Mode) - Use this selection to access MPE controls and subwindows.



Access this selection from the **Root Window** by *Clicking* on **MPEcontrol** when the Geographic Display is in MPE mode.

Notes:

Select **Next Hour** to select and display MPE data for the hour following the currently displayed hour. The specific data field selected from the **MPEfields** menu is carried over in the selection and loading of the new data.

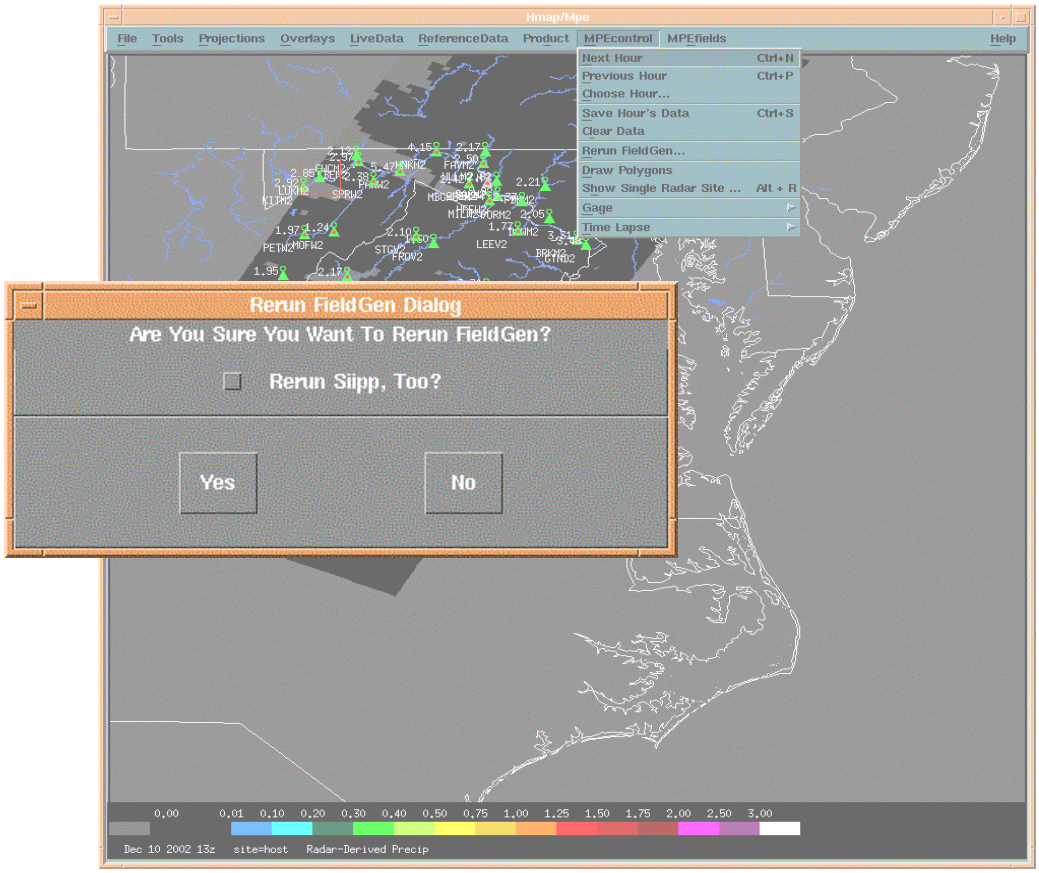
Select **Previous Hour** to select and display MPE data for the hour preceding the currently displayed hour. As with Next Hour, the currently selected data field is carried over in the selection and loading of the new data.

Select **Save Hour's Data** to save the currently displayed MPE precipitation field as the best-estimate precipitation field for the hour. Reference data fields (**Radar Coverage**, **Radar Height**, **Local Span**, **Local Bias**, and **Prism**) cannot be saved as best-estimate data. Missing values in the precipitation field are replaced by 0.0 when data are saved, to accommodate functions that rely on precipitation estimates not being missing.

Select **Clear Data** to clear MPE data from the Geographic Display and return to HydroView mode. Once MPE data are erased, the only way to redisplay the data is to select a new date/hour by selecting **Choose Hour** from the **MPEcontrol** menu.

All other selections launch a subwindow to complete the selected option.

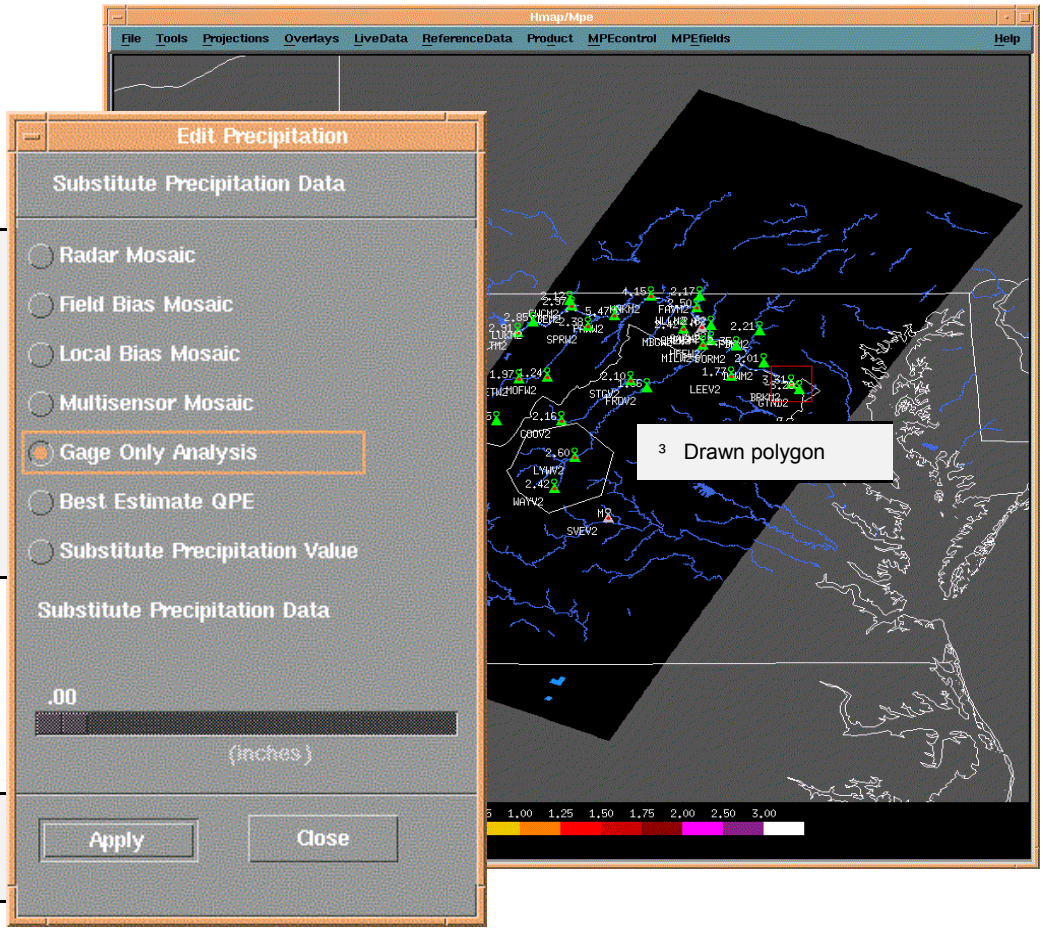
Rerun FieldGen Option - Use this selection to regenerate all of the MPE fields in order to produce a new best-estimate precipitation field based on the modified data.



Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Rerun FieldGen**.

Notes: **R**erunning FieldGen incorporates new data (for example, if new gages are added using the **Add Pseudo Gage** option) into the **Field Bias Radar Mosaic**, **Local Bias Radar Mosaic**, **Gage Only Analysis**, **Multisensor Mosaic**, and **Best Estimate QPE** fields. **W**hen this option is selected, a dialog window (shown above) pops up to provide the opportunity to cancel the selection and the option to also rerun the MPE precipitation processor, **siipp**. Rerunning siipp ensures that the very latest precipitation gage reports will be reflected in the grids regenerated by FieldGen. However, rerunning siipp and rerunning FieldGen may each take several minutes, and the dialog options are provided to give the forecaster the opportunity to omit siipp or to cancel the entire operation due to time constraints.

Draw Polygons Mode/Edit Precipitation Window - Use this selection to manually draw precipitation areas onto the Geographic Display by defining polygons and assigning a precipitation value to each.



Select source of precipitation data to assign to the drawn polygon

Click on Apply to assign precipitation value

Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Draw Polygons**.

Notes:

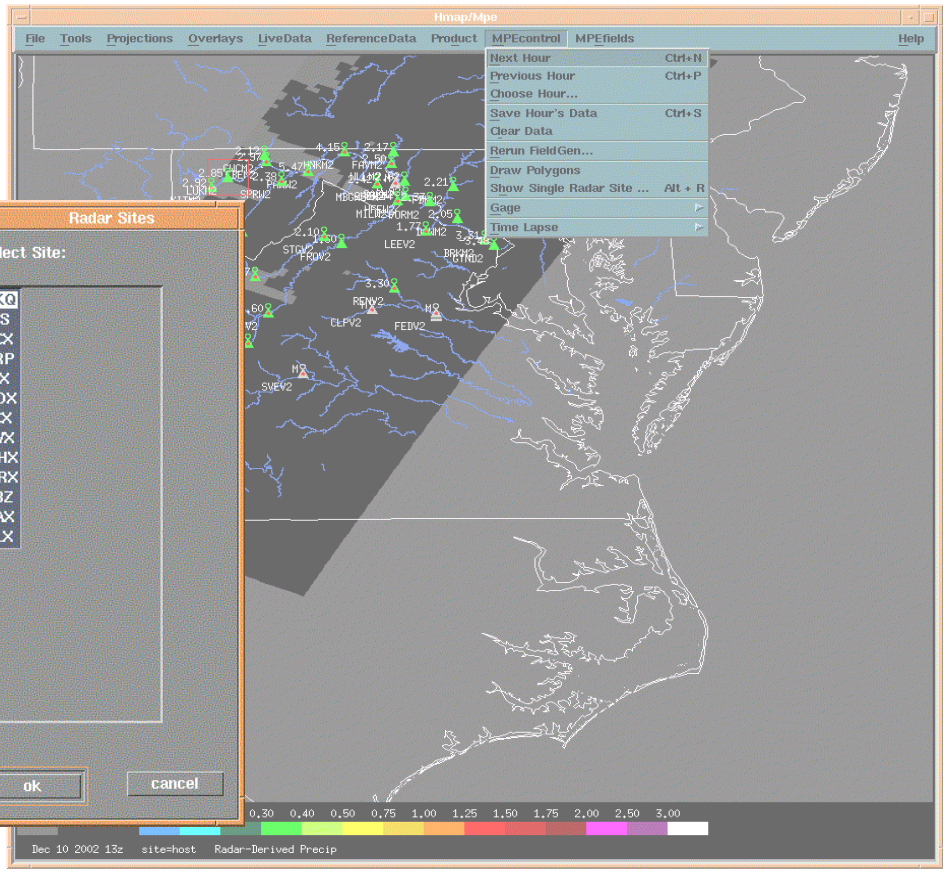
While in "draw mode", a polygon may be drawn by *Clicking* with the left mouse button where each polygon vertex is desired and then *Clicking* once with the right mouse button to close the polygon. A polygon may contain up to 19 points.

When a polygon is closed, the Edit Precipitation Window is displayed, allowing the user to assign a specific precipitation value (**Substitute Precipitation Value**) or to select an MPE-generated field as the source of the precipitation value to substitute. Closing the Edit Precipitation Window returns the user to draw mode on the Geographic Display.

Up to 10 polygons may be drawn on the Geographic Display.

In order for changes made in draw mode to become permanent, the data field must be saved using the **Save Hour's Data** option on the **MPEcontrol** menu.

Show Single Radar Site Option - Use this option to select a specific radar site that provides coverage within the WFO or RFC area and then view the Single Radar Site display for the selected site.

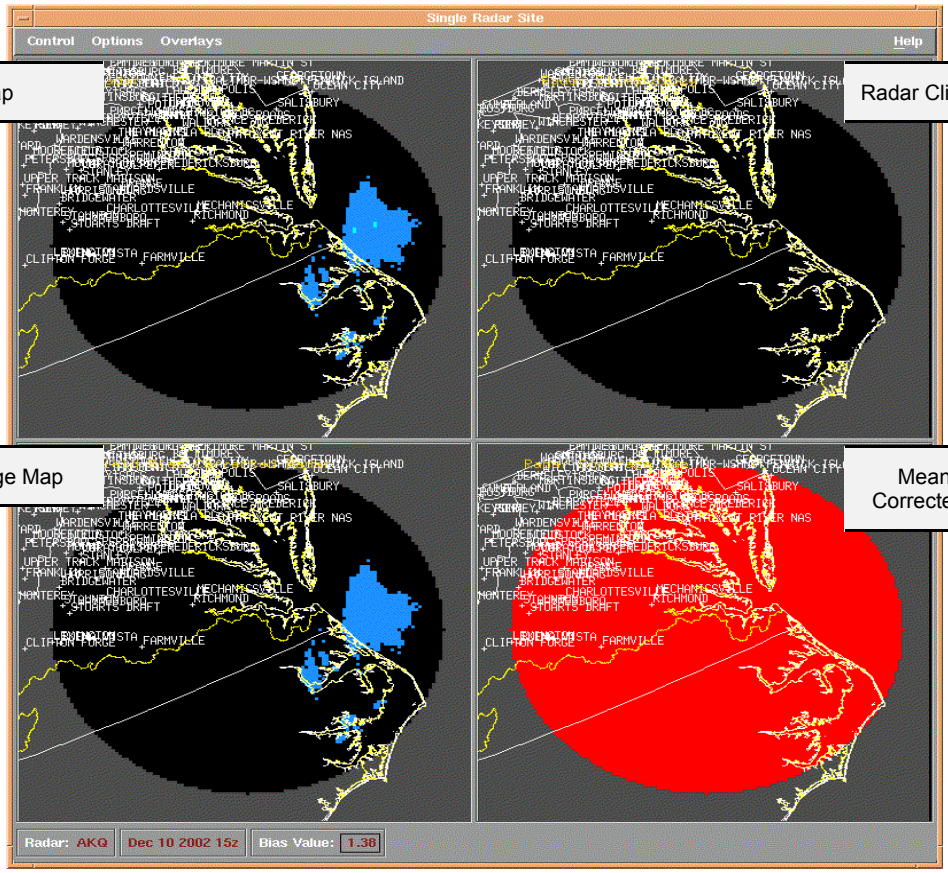


Select radar site

Click on OK

Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Show Single Radar Site**.

Single Radar Site Display Window - Displayed below is an example of a Single Radar Site display generated after a specific radar site is selected.



Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Show Single Radar Site**, select the radar site of interest (see previous page) and *Click* on **OK**.

Notes:

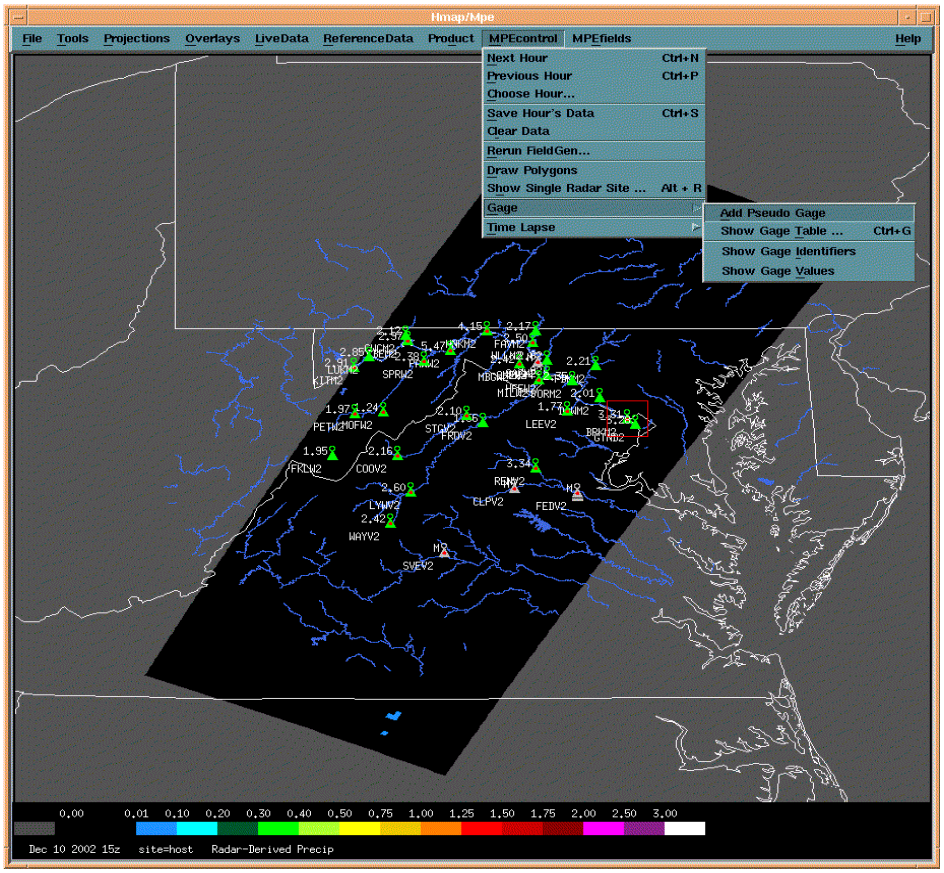
The menu bar on the Single Radar Site window contains **Control**, **Options**, and **Overlays** submenus.

The **Control** submenu provides the option to **Close** the single site window.

The **Options** submenu contains the items **Edit Bias Value**, **Ignore Radar**, **Display Adaptable Param**, and **Display Supplemental Data**. **Edit Bias Value** allows alteration of the radar mean field bias value to correct its precipitation estimates. **Ignore Radar** allows exclusion of a specific radar's data from the derived MPE precipitation. **Display Adaptable Param** displays radar-specific adaptable parameters. **Display Supplemental Data** displays data derived from the radar field.

The **Overlays** submenu provides a means of toggling on or off a specific overlay in each of the four display panes. The overlays include **RFC boundaries**, **States**, **County**, **Cities/Towns**, **Basin boundaries**, **Rivers**, **Precip Gages**, and **Radar Umbrella**.

Gage Submenu - Use this selection to access the MPE gage options.



Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Gage**.

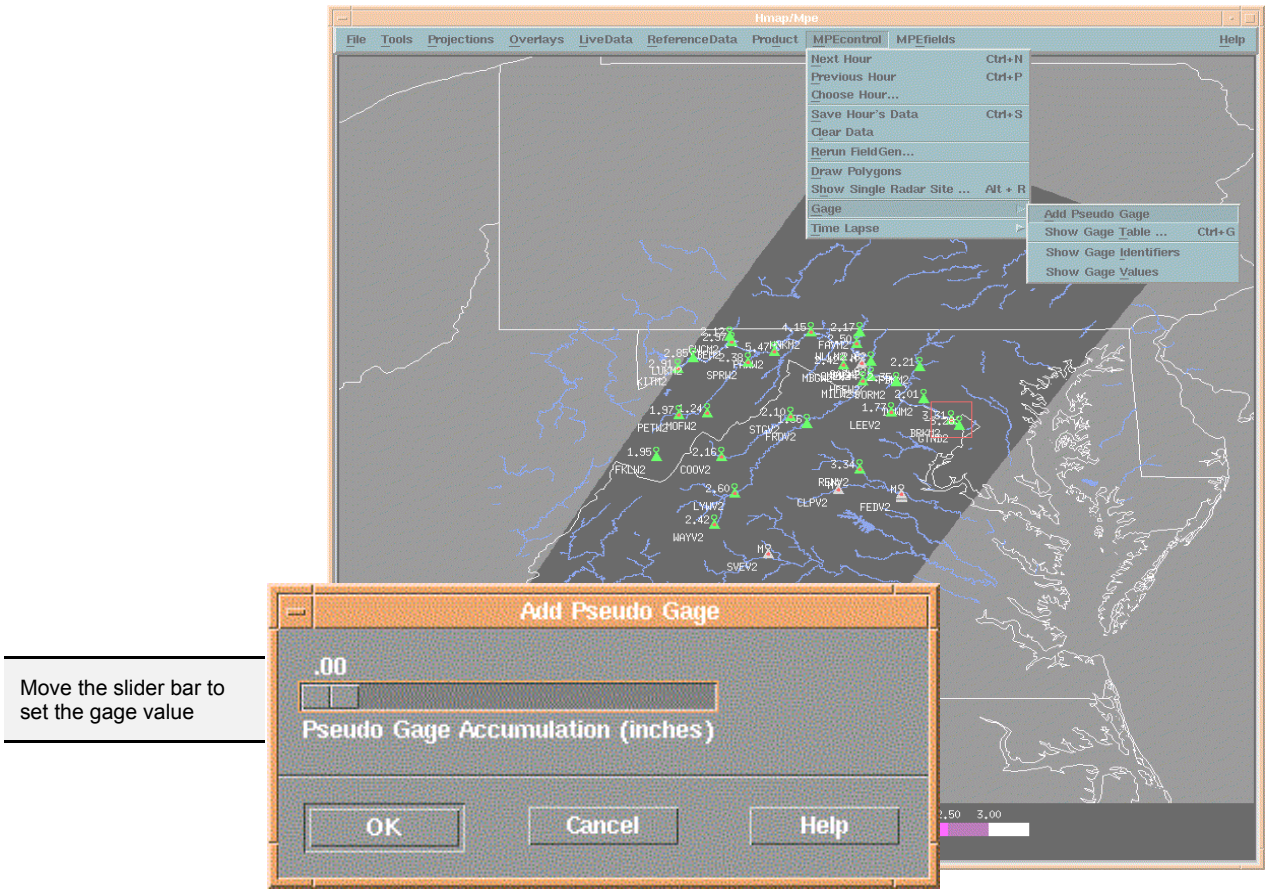
Notes:

Use the **Show Gage Identifiers** option to toggle on and off the display of gage identifiers on the Geographic Display when in MPE mode.

Use the **Show Gage Values** option to toggle on and off the display of gage values on the Geographic Display when in MPE mode. A missing gage value is signified by the value "-999.".

Other selections launch a subwindow to complete the selected option.

Add Pseudo Gage Window - Use this selection to add a false (pseudo) gage report.



Move the slider bar to set the gage value

Click OK to create the new gage report

Click Cancel to cancel the new gage report

Click Help to view help about the Add Pseudo Gage functionality

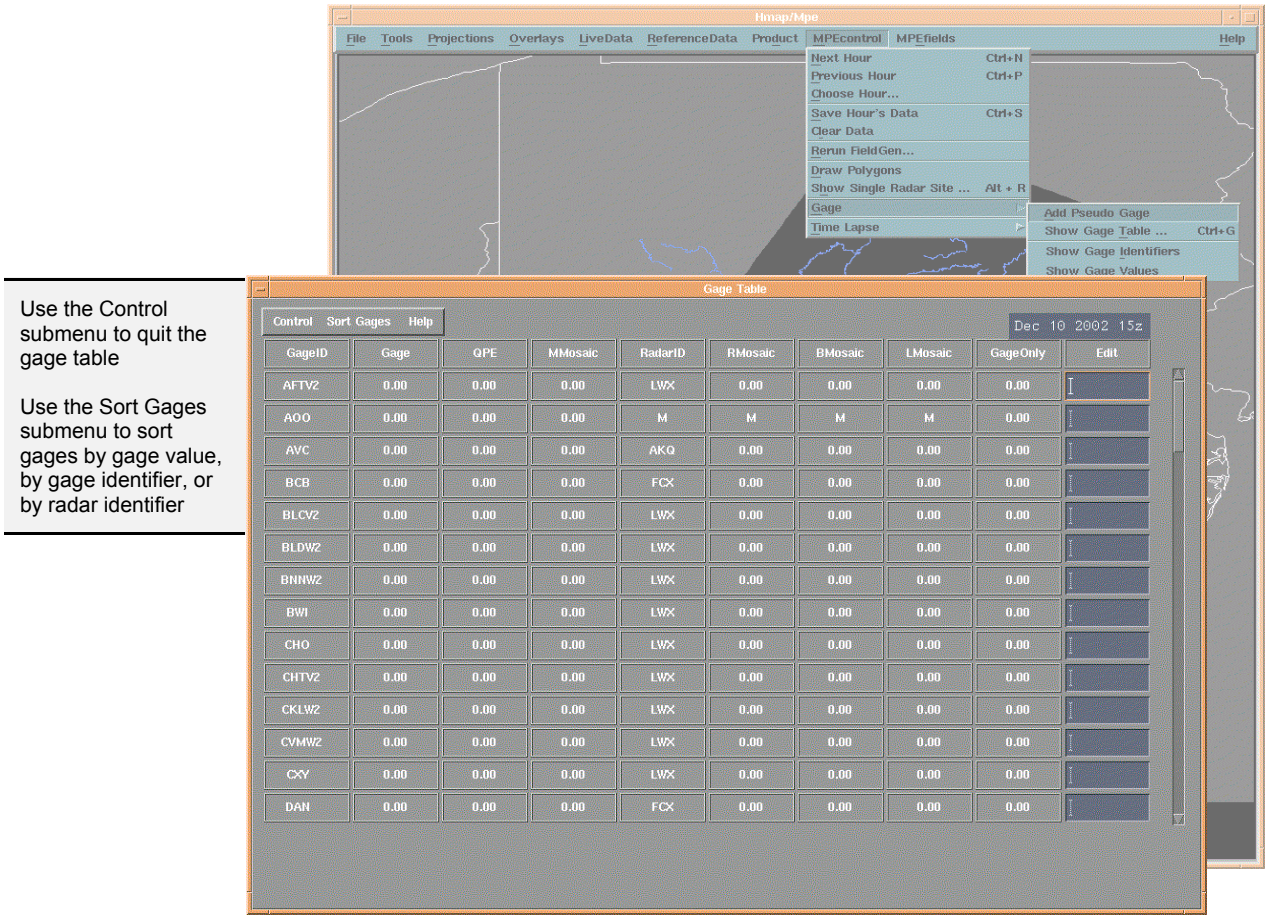
Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Gage**. From the **Gage Submenu**, *Click* on **Add Pseudo Gage**. When this option is selected, the mouse pointer becomes a leftward pointing hand to indicate that the application is in **pseudo gage mode**. In pseudo gage mode, *Click* on the Geographic Display at the point where the pseudo gage is to be inserted, which causes the **Add Pseudo Gage Window** to be displayed.

Notes:

Adding a new pseudo gage causes a new record to be created in the database. In order to use the new gage data in the generated fields, the **Rerun FieldGen** option must be selected. After FieldGen has been rerun, the **Gage Only** and **Multisensor Mosaic** analyses will reflect the new gage.

Pseudo gages created within the hour are named automatically, starting with "pseudo00" and progressing to "pseudo01", "pseudo02", etc.

Gage Table Window - Use this selection to view a tabular display of all of the gages contained within the WFO or RFC area's HRAP grid.



Use the Control submenu to quit the gage table

Use the Sort Gages submenu to sort gages by gage value, by gage identifier, or by radar identifier

Use the Edit column to enter a new value for a gage

Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Gage**. From the **Gage Submenu**, *Click* on **Show Gage Table**.

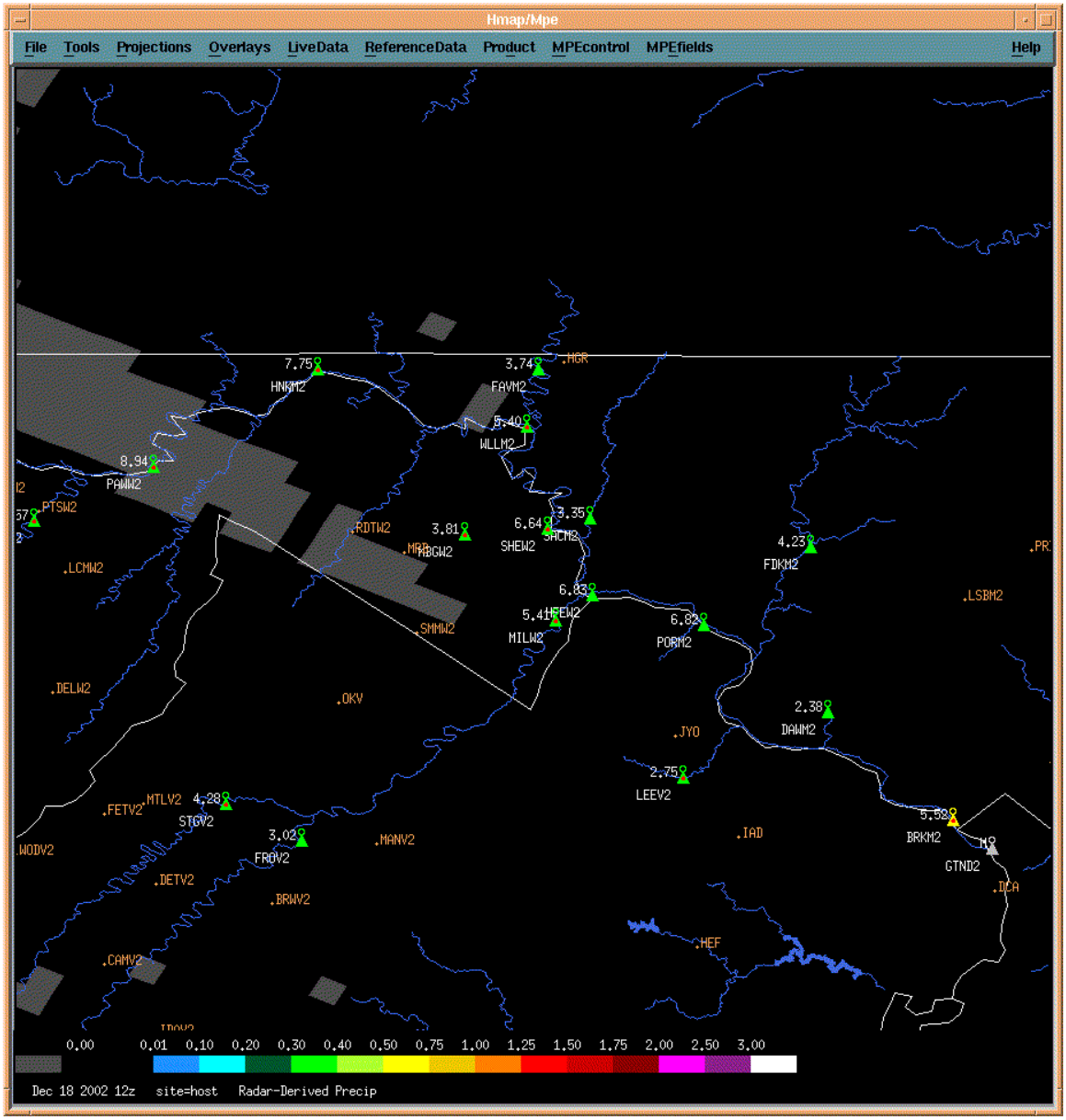
Notes:

The gage table shows a row for each gage that contributes to the **Gage Only** and **Multisensor Mosaic** fields and to the calculation of the mean field bias, including any pseudo gages created by the user.

A missing value in the Edit column must be entered as either "M" or "m".

Selecting **Quit** from the **Control** submenu causes Edit values to be recorded; however, FieldGen must be rerun to make the modifications visible. (See p. 3-49, **Rerun FieldGen Option**.)

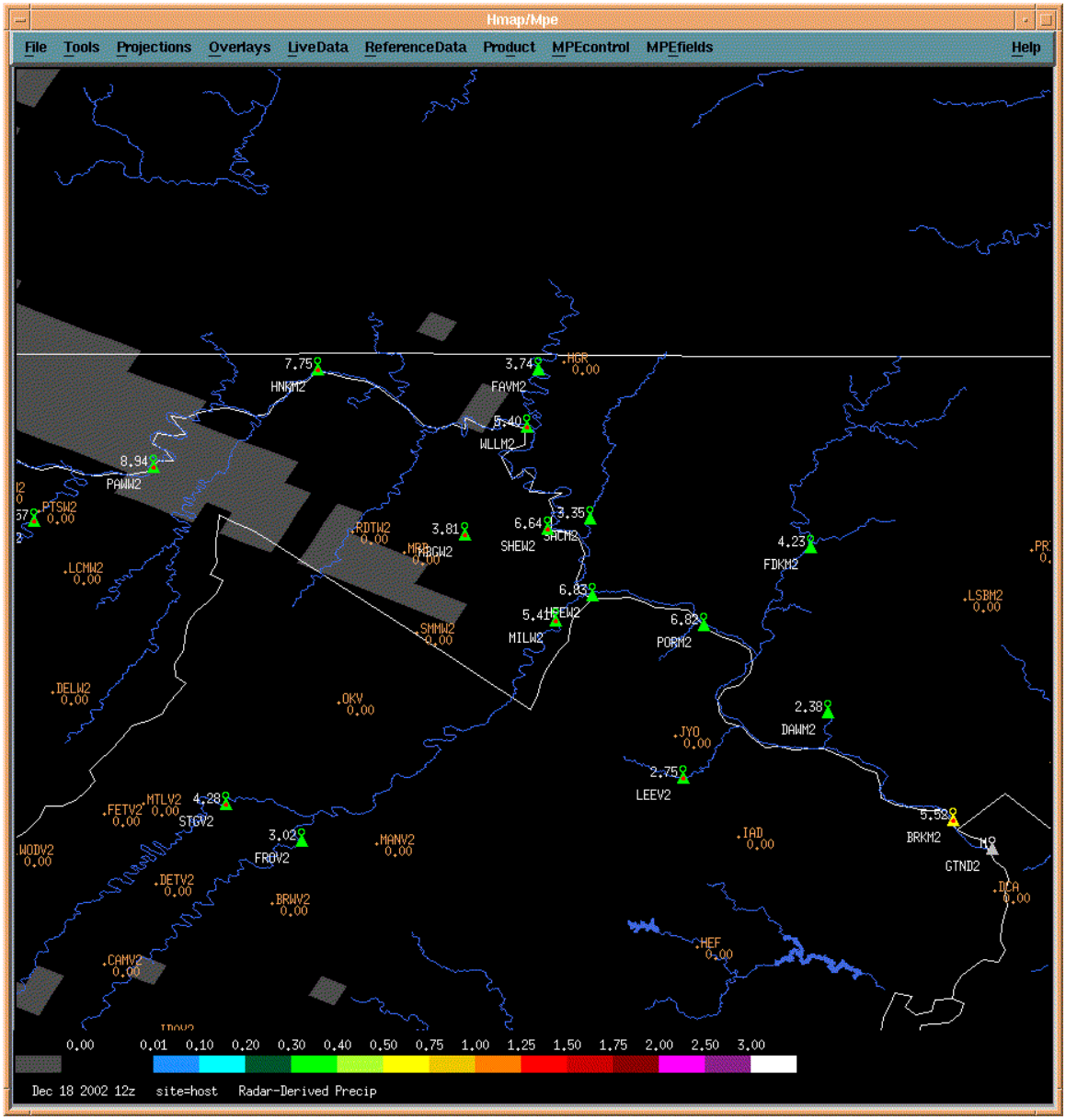
MPE Geographic Display (Gage Identifiers On) - Use this selection to view the location and identifiers of gages.



Access this view from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Gage**. Open the **Gage Submenu** and *Click* on **Show Gage Identifiers**.

Notes: The Geographic Display has been zoomed in for clarity in the view above.

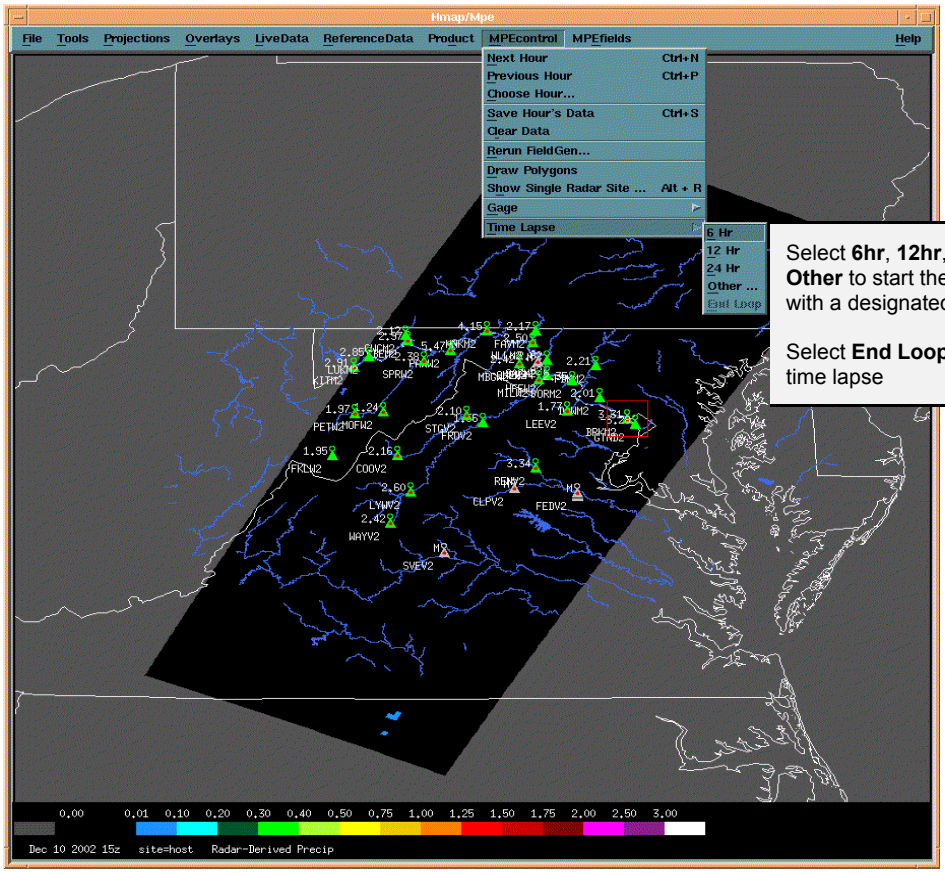
MPE Geographic Display (Gage Values On) - Use this selection to view the location and values of gages.



Access this view from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Gage**. Open the **Gage Submenu** and *Click* on **Show Gage Values**.

Notes:	**T**he view above has both gage identifiers and gage values displayed. The Geographic Display has been zoomed in for clarity.

Time Lapse Submenu - Use this selection to access the MPE time lapse options.



Select **6hr**, **12hr**, **24hr**, or **Other** to start the time lapse with a designated duration

Select **End Loop** to end the time lapse

Access this selection from the **Root Window** by *Clicking* on **MPEcontrol**, then on **Time Lapse**.

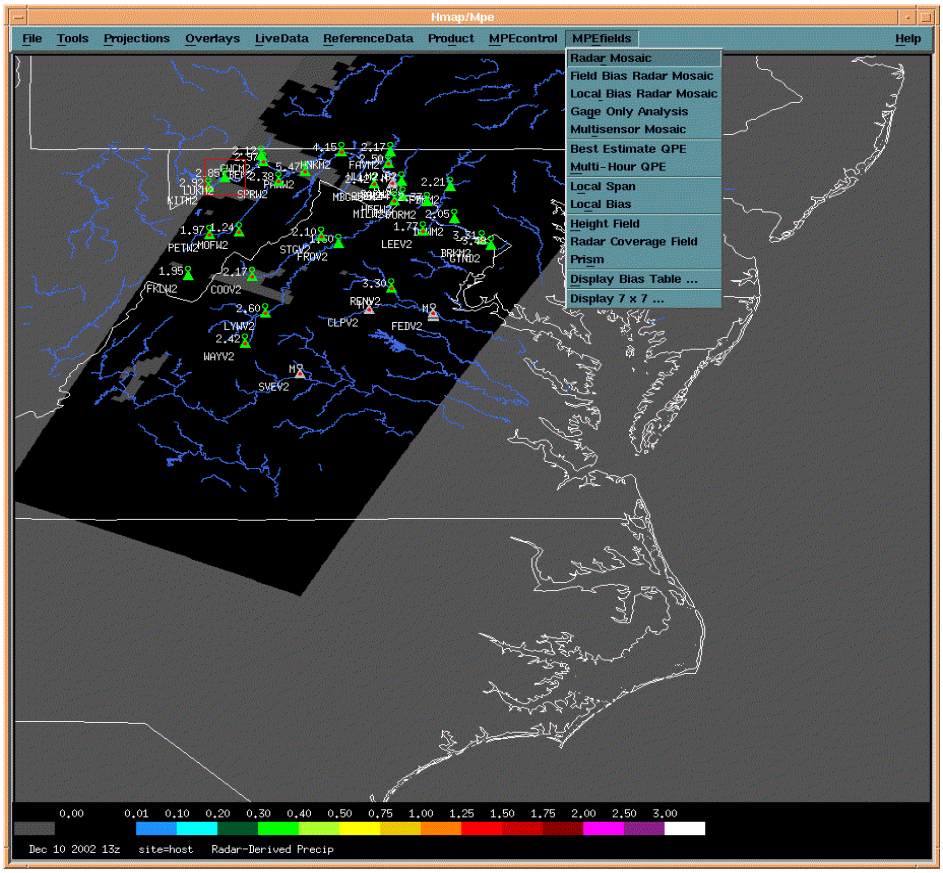
Notes:

Select **Other** to launch a slider bar subwindow that allows the duration of the time lapse to be set to any value from 1 hour to 24 hours.

All time lapse durations end with the current hour of data being examined. For example, if the 6 hour time lapse is chosen, then MPE data for the last five hours plus the current hour are displayed in the time lapse. By default, when time lapse is started, it begins with the oldest data field and loops to the most recent data field. It then resets back to the oldest data field and loops again to the most recent data field. This process continues until the user ends the time lapse by selecting **End Loop** from the **Time Lapse** submenu or by using one of the available mouse methods.

Mouse methods include *Clicking* with the middle mouse button, which ends the time lapse and zooms into the map, and *Clicking* with the left mouse button, which ends the time lapse and zooms out of the map. To end the time lapse without zooming, the **End Loop** option on the **Time Lapse** submenu must be used.

Root Window (MPE Fields selected from Menu Bar while in MPE Mode - Use this selection to allow the display of the different MPE data and reference fields.



Access this selection from the **Root Window** by *Clicking* on **MPEfields** when the Geographic Display is in MPE mode.

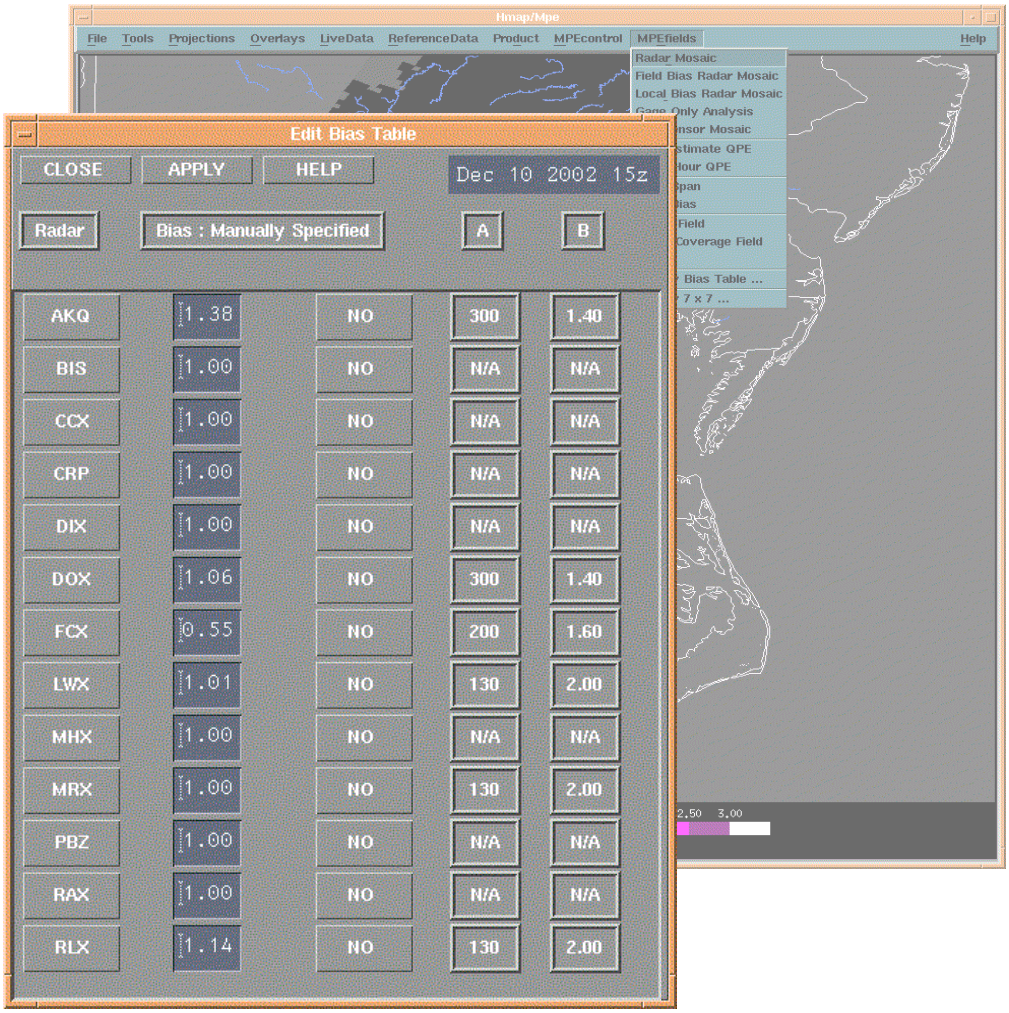
Notes:

The first six field options listed on the menu are observed rainfall estimates based either purely on radar (**Radar Mosaic**), purely on gage data (**Gage Only Analysis**), on a combination of radar and gage estimates (**Multisensor Mosaic**), on biased radar rainfall amounts (**Field Bias Radar Mosaic**, **Local Bias Radar Mosaic**), or "best guess" (**Best Estimate QPE**).

The **Local Span**, **Local Bias**, **Height Field**, **Radar Coverage Field**, and **Prism** options are reference fields that are used when computing other products, such as **Local Bias Radar Mosaic**, **Field Bias Radar Mosaic**, and **Best Estimate QPE**.

The **Display Bias Table** and **Display 7 x 7** options each launch a subwindow to complete the selected option.

Bias Table Display Window - Use this option to display the individual mean field biases for each of the radars providing at least some coverage for the WFO or RFC area.



Selecting any one of the radars listed launches a window displaying the memory span information used in computing the radar's mean field bias

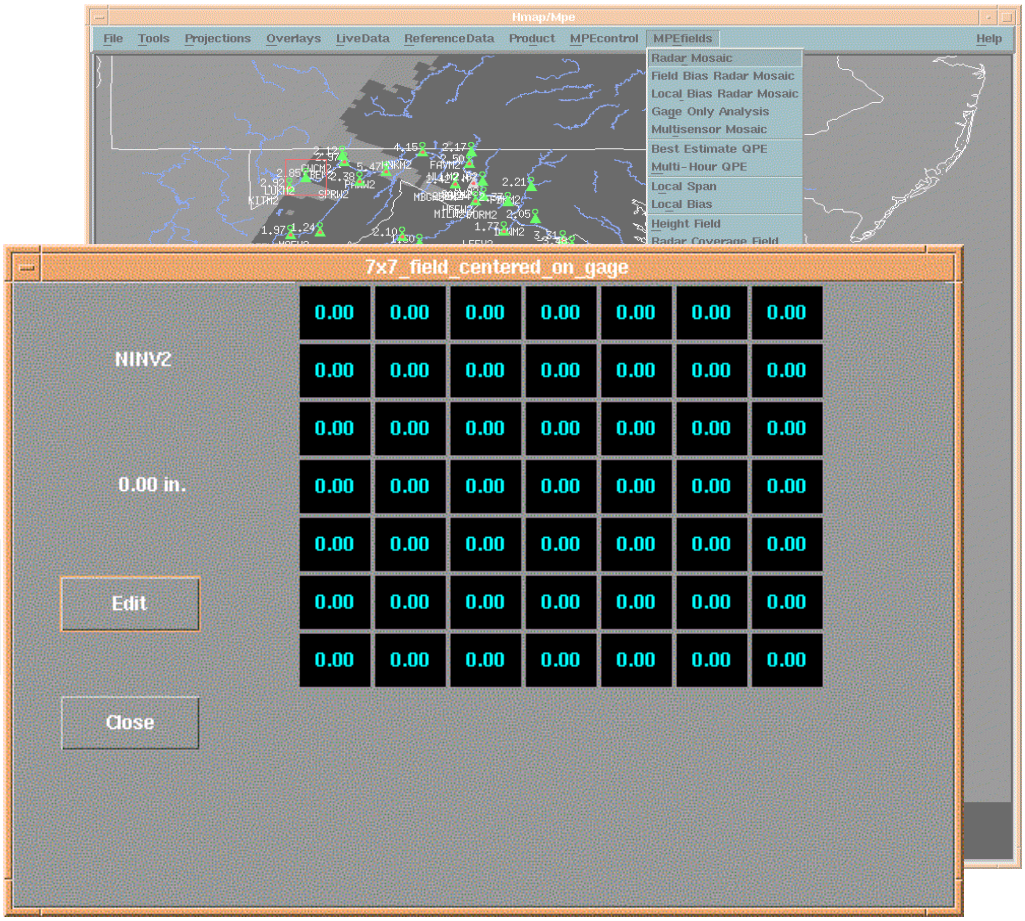
Access this selection from the **Root Window** by *Clicking* on **MPEfields**, then on **Display Bias Table**.

Notes:

Columns show the radar's identifier, its mean field bias value, whether or not the mean field bias has been manually updated, and the A and B coefficients used in the Z-R relationship by the Radar Product Generator when producing the DPA product.

Use the **Apply** button to apply changes edited into the mean field bias value column.

7 x 7 Display Window - Use this selection to display a gage point and the 7 x 7 matrix of HRAP grids centered on it.



Click on **Edit** to pop up a slider bar for editing the gage's precipitation value

Access this selection from the **Root Window** by *Clicking* on **MPEfields**, then on **Display 7 x 7**.

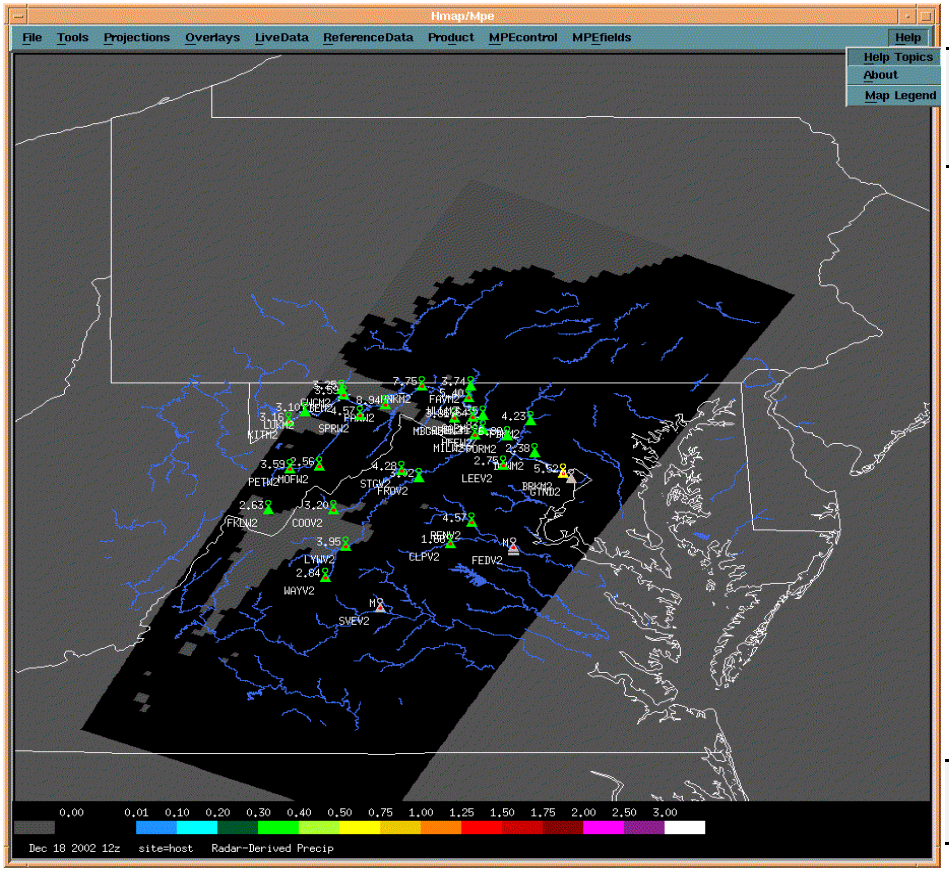
Notes:

When this option is chosen from the **MPEfields** menu, the mouse pointer changes to a leftward pointing hand. A gage is selected by positioning the hand over it and executing a single *Click* of the left mouse button. If a gage is not directly under the clicked point on the map, the gage that is closest to the click point is selected as the center of the 7 x 7 display. After a precipitation gage is selected, the 7 x 7 window is displayed. The window contains the identifier of the gage that is the center of the grid, the value of the gage, and a 7 by 7 grid in which each element represents the estimated precipitation value of one of the HRAP bins in the vicinity of the gage.

The values displayed in the grid reflect the type of field that the user is viewing in the Geographic Display. For example, if the **Best Estimate QPE** field is being viewed in the Geographic Display, the values inserted into the 7 x 7 grid will also be **Best Estimate QPE**. The colors assigned to the values in the 7 x 7 HRAP grid follow the MPE Map Legend on the Geographic Display.

In order for changes to be incorporated into the other MPE fields, **FieldGen** must be rerun for the hour that was edited.

Map Legend Option - Use this selection to toggle the MPE map legend at the bottom of the Geographic Display on or off.



Click on Legend to toggle MPE map legend on or off

MPE map legend toggled on

Access this selection from the **Root Window** by *Clicking* on **Help**, then on **Legend**.

Notes: By default, the MPE map legend is on when in MPE mode and off when in HydroView mode.

The HydroView_MPE Operations Guide provided below is designed to give the user a quick reference summary of the primary features of HydroView_MPE and how to access them. The Guide is subdivided into sections specifically pertaining to the Geographic Display, those operations pertaining to a particular station, those operations pertaining to all stations, those operations pertaining to MPE mode, and those operations that control mode changes and application termination. The HydroView_MPE Functional Guide, which follows the Operations Guide, provides more detail on the procedures to perform various functions in HydroView_MPE.

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
For the Geographic Display		
Manage the Geographic Display (Point Data Icons) **•Station type displayed** **•Information displayed** **•Data displayed** **•Time periods displayed**	Point Display Control Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Click - **Point Display Control** Click - Selections of choice
Manage the Geographic Display (Flash Flood Guidance)	Flash Flood Guidance Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Click - **Flash Flood Guidance** Click - FFG of choice Click - Product of choice
Manage Geographic Display (Overlays)	Root Window	Start - **Root Window** Select - **Overlays** (Menu Bar) Click - Overlay of choice
Load Latest Available Data (within the last 15 minutes)	Root Window	Start - **Root Window** Select- **LiveData** (Menu Bar) Click - **Refresh Data**
To Select a Station		
Select Station	Station Selection Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Station Selection** Click - Station of choice

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
Select Station (Alternate Approach)	Root Window	Start - **Root Window** (Graphical Display) Double Click - Station icon (double click left mouse button, directly on icon)
Select a Station Before Performing the Following		
Review Current and Past Time Series for Observed and Forecast Data for Selected Station	Time Series Control Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select -**Time Series Control** Click **Graph** or **Table**
Review Current and Past Time Series for Observed and Forecast Data for Selected Station (Alternate Approach)	Root Window	Double Click - Station icon (double click middle mouse button, directly on icon) Click - **Graph** or **Table**
Review and Edit Current and Past Observations in Tabular Form for Selected Station (Including Deletion and Insertion of Observations)	Tabular Time Series Display Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Time Series Control** Click - **Table**
Review Geophysical Information and Current Stage Data (Selected Station and Other Stations Along the Reach)	Station Profile Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Station Profile**

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
Review Questionable and Bad Data Detected During the Quality Control Process	Questionable and Bad Data Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Questionable and Bad Data** Click - **Filter By: Location** (View by station and/or by data parameter)
Review and Save or Delete Manually or Automatically Rejected Observations	Rejected Data Trash Can Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Rejected Data Trash Can** Click - **Filter By: Location**
Review Background Gage Information (e.g., geophysical, record stages, flood stage)	Staff Gage Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Staff Gage**
Review Default Impact Statements for Various Stages	Impact Statement Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Impact Statement**
Review Existing Rating Curve	Rating Curve Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Rating Curve**
Review Background Information on Data Sources **•Observers** **•DCPs** **•Telemetry**	Data Sources Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Data Sources** Select - **Type**

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
Review Background Information for Contacts (e.g., telephone numbers, concerns)	Contacts Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Contacts**
Review Various Current and Past Issued Products in the Database (e.g., river statements, flood warnings, RR1)	Product Viewer Window	Start - **Root Window** Select - **Product** (Menu Bar) Select - **Product Viewer**
Review Information and Data for Any Available Historical Crest	Crest History Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Crest History**
For All Stations		
Review Reporting Status for All Stations	Station Reporting Status/Latest Observations Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Station Reporting Status/Latest Observations**
Review Data that have Exceeded Alert and Alarm Thresholds	Alert and Alarm Data Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Alert and Alarm Data**
Review all Questionable and Bad Data Detected During the Quality Control Process	Questionable and Bad Data Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Questionable and Bad Data** (Sort by Location or Time)
Review and Save or Delete Manually or Automatically Rejected Observations	Rejected Data Trash Can Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Rejected Data Trash Can** Click - **Filter By: Physical Element**

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
Display Up-to-the-Minute Precipitation Accumulation Information for a Selected Point	Point Precipitation Accumulations Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Point Precipitation Accumulations** Select - Desired point(s) and other parameters Click - **Load Data**
For MPE Mode Operations		
Switch from HydroView Mode to MPE Mode	MPE Data Hour Selection Window	Start - **Root Window** Select - **MPEcontrol** Select - **Choose Hour** Select - Date/time of hour to display Select - **OK**
Choose Hourly MPE Data	MPE Data Hour Selection Window	Start - **Root Window** Select - **MPEcontrol** Select - **Choose Hour** Select - Date/time of hour to display Select - **OK**
Save Hourly MPE Data	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Save Hour's Data**
Update MPE Calculations (regenerate MPE data)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Rerun FieldGen ...** Check - **Rerun Siip, Too**, if desired Click - **OK**

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
Draw Polygons (draw precipitation areas)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Draw Polygons**
Review, Edit, or Ignore Radar Display and Parametric Data for a Single Radar Site (includes selection of Overlays for Radar Display Panels)	Single Radar Site Display Window	Start - **Root Window** Select - **MPEcontrol** Select - **Show Single Radar Site ...** Select - Radar site to display Click - **OK**
Manage Gage Display and Data for all Gages Contained within the WFO or RFC Areas HRAP Grid Geographical Display	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Gage** Select - Option from **Gage Submenu**
Display Time Lapse of MPE Data	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Time Lapse** Select - Option from **Time Lapse Submenu**
Display the Different HydroView_MPE Data and Reference Fields	Root Window	Start - **Root Window** Select - **MPEfields** Select - Option from **MPE Fields Menu**
Switch from MPE Mode to HydroView Mode	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Clear Data**

HydroView_MPE Operations Guide

Operation	Window to Use	Getting to the Window
For the HydroView_MPE System		
To Switch from HydroView Mode to MPE Mode	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Choose Hour** Select - Date/time of hour to display Click - **OK**
To Switch from MPE Mode to HydroView Mode	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Clear Data**
To Exit from HydroView_MPE	Root Window	Start - **Root Window** Select - **File** Select - **Exit**

The following HydroView_MPE Functional Guide provides examples of various functions that can be performed in HydroView_MPE. This guide can also be used as an application test tool to exercise HydroView_MPE capabilities. For some HydroView_MPE functions, there are alternative approaches for viewing data and information to those presented in the Functional Guide. The application of these alternatives is at the discretion of the user.

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display Basin Boundaries	Root Window (Geographic Display)	Start - **Root Window** Select - **Overlays** (Menu Bar) Select - **Basins** Basins will be shown on Geographic Display. Other overlays can also be displayed using this same procedure.
Display Radar Umbrella(s)	Root Window (Geographic Display)	Start - **Root Window** Select - **Overlays** (Menu Bar) Select - **Radars** Radar umbrellas will be shown on Geographic Display.
Display Precipitation Accumulation for the Past 24 Hours at all Stations Collecting Precipitation Data (Note - due to the large number of precipitation stations, it may be easier to read the display if the station name and ID are suppressed and the zoom-in feature is used.)	Point Display Control Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Point Display Control** Click - **Precip** (Station Icons and Data) under ***Point Data Filter*** Click - **Suppress: Zeroes and Missing** under ***Precip:*** Click - **Set Time Period** under ***Precip:*** Click - **Set Time** Click - **24** Click - **OK** (Return to Root Window) Click anywhere on the display to activate request; data will be displayed with icons.

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Determine Which Stations Report Precipitation	Root Window (Geographic Display)	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Point Display Control** Click - **Precip** (Station Icons Only) under ***Point Data Filter*** Click - **Name** under ***Point Data Options*** (optional) Click anywhere on display to activate request. (Note: Need not suppress zeroes or missing under ***Precip:***)
Review Precipitation Accumulation at a Station in Graphical Form	Time Series Control Window Graphical Time Series Display Window	Start - **Root Window** Select - **LiveData** (Menu Bar) Select - **Time Series Control** Select a Station (Must be a station that reports precipitation) Click - Station of Choice (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Select appropriate Physical Element/ TypeSource Codes Select - **Graph** Precipitation Accumulator is a default display.

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Review Action and Flood Stages at a Station	Staff Gage Window	Start - **Root Window** Select - **LiveData** Select - **Station Selection** Click - Station of Choice Click - **Cancel** (Return to Root Window) (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Select - **ReferenceData** (Menu Bar) Select - **Staff Gage** Information will be displayed in the window.
Determine Flood Impacts for Certain Stages at a Station	Impact Statement Window	Start - **Root Window** Select - **LiveData** Select - **Station Selection** Click - Station of Choice Click - **Cancel** (Return to Root Window) (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Select - **ReferenceData** (Menu Bar) Select - **Impact Statement** Click - Stage of Choice Impact statement will be displayed in the window.

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Determine Record Flood Levels at a Station	Staff Gage Window	Start - **Root Window** Select - **LiveData** Select - **Station Selection** Click - Station of Choice Click - **Cancel** (Return to Root Window) (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Select - **ReferenceData** (Menu Bar) Select - **Staff Gage** Information will be displayed in the window.
Enter a New Observation for a Station	Time Series Control Window Tabular Time Series Display Window	Start - **Root Window** Select - **LiveData** Select - **Time Series Control** Select a station (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Click - **Table** Select data type to modify Enter new data Click - **Update/Insert** (incorporates change and keeps window active) Value entered permanently into data base until deleted.

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Delete an Erroneous River Stage Observation for a Station	Time Series Control Window Tabular Time Series Display Window	Start - **Root Window** Select - **LiveData** Select - **Time Series Control** Select a station (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Click - **Table** Select data type to modify. Highlight data to delete Click - **Delete selected** (incorporates change and keeps window active) Value deleted permanently from database unless re-entered.
Determine the Appropriate Contact(s) for a Station	Contacts Window	Start - **Root Window** Select - **LiveData** Select - **Station Selection** Click - Station of Choice Click - **Cancel** (Return to Root Window) (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Select - **ReferenceData** (Menu Bar) Select - **Contacts** Contacts, along with telephone numbers, will be displayed listed in order of importance.

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Retrieve the Physical Dimensions of a Dam in the WFO Service Area	Dam Catalog Window	Start - **Root Window** Select - **ReferenceData** (Menu Bar) Select - **Dam Catalog** Use the Search/Filter Criteria to select the dam(s) to view (the list of dam(s) matching the criteria will then be displayed). Click - on the dam(s) of interest from the displayed list A screen displaying General Information for the first dam selected will be displayed If this is the dam of interest, Click on Physical Dimensions at the top of the screen, the information will be displayed If this is not the dam of interest, Click on Next Dam button at the bottom of the screen until the appropriate dam is displayed

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Review Past Products Issued for a Station	Product Viewer Window	Start - **Root Window** Select - **LiveData** Select - **Station Selection** Click - Station of Choice Click - **Cancel** (Return to Root Window) (Alternatively select station by double clicking left mouse button on station of choice in Geographic Display) Select - **Product** (Menu Bar) Select - **Product Viewer** Click - **List: Products for Selected Station** Click - Product of choice to review in **Product Information Window** (Products can be sorted or filtered by ID)
Choose Hourly MPE Data	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Choose Hour** Select - Date/time of hour to display Click - **OK**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Choose Next Hour of MPE Data (go forward one hour)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Next Hour** If the Current Hour's data was saved previously, the Next Hour's data will display. If not, an acknowledgment window will display, indicating **"Data Not Saved - OK to proceed"**. The responses are: Click - **OK** to save data and display the Next Hour's data. Click - **Help** for Main Hmap_MPE options. Click - **Cancel** to keep the Current Hour's data displayed without saving.
Choose the Previous Hour of MPE Data (go back one hour)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Previous Hour** If the Current Hour's data was saved previously, the Previous Hour's data will display. If not, an acknowledgment window will display, indicating **"Data Not Saved - OK to proceed"**. The responses are: Click - **OK** to save data and display the Previous Hour's data. Click - **Help** for Main Hmap_MPE options. Click - **Cancel** to keep the Current Hour's data displayed without saving.
Save Currently Displayed Hourly MPE Precipitation Data (as the Best Estimate)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Save Hour's Data**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Clear the Display of MPE Data (exit MPE mode)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Clear Data**
Regenerate MPE Data after Manual Modifications and/or Deletions are Made to Precipitation and Radar Data	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Rerun FieldGen ...** Check - **Rerun Siipp, Too**, if desired Click - **Yes** to run FieldGen
Draw a Precipitation Area (polygon) within the HRAP MPE Grid to Add/Modify Precipitation to MPE	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Draw Polygon** Draw polygon by clicking the left mouse button to place each vertex (up to 19 vertices). Click the right mouse button to close the polygon. Select - **Substitute Precipitation Value** to activate the slider bar and set the precipitation amount From the **Edit Precipitation** dialog box, left click the mouse to select the source of precipitation to add. Select - **Apply** Select - **Close** to return to the Root Window Select - **MPEcontrol** Select - **Rerun FieldGen ...**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display Four-Panel Single Radar Site Information (NOTE - the four panels in the Single Site Radar Display Window are, clockwise from upper left: **Raw Radar**, **Radar Climatology**, **Radar Coverage Map**, and **Mean Bias Corrected Radar**.)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Show Single Radar Site** Select a radar site from the list. Click - **OK**
Change a Single Radar Site's Mean Field Bias Value (used to correct its precipitation estimate)	Single Radar Site Display Window	Start - **Root Window** Select - **MPEcontrol** Select a radar site from the list. Click - **OK** Select a radar site from the list. Click - **OK** In the **Single Radar Site Display Window**: Select - **Options**, **Edit Bias Value** Move slider bar to desired bias value. Select - **OK** to return to Root Window Select - **MPEcontrol** Select - **Rerun FieldGen ...**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Exclude a Specific Radar Site's Data from the Derived MPE Precipitation	Single Radar Site Display Window	Start - **Root Window** Select - **MPEcontrol** Select - **Show Single Radar Site** Select - Radar site to exclude Click - **OK** In the **Single Radar Site Display Window**: Select - **Options**, **Ignore Radar** Select - **Control**, **Close** to return to the Root Window Select - **MPEcontrol** Select - **Rerun FieldGen ...**
Display the Adaptable Parameters for a Single Radar Site **(These include the following parameters: preprocessing algorithm, rate algorithm, accumulation algorithm, adjustment algorithm.)**	Single Radar Site Display Window	Start - **Root Window** Select - **MPEcontrol** Select - **Show Single Radar Site** Select - Radar site to display Click - **OK** Four panels are displayed. Select - **Options** Select - **Display Adaptable Param** Click - **Close** to return to the Root Window

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display the Data Derived from the Radar Field Site (Supplemental Data) (NOTE - these data include product generation time, volume coverage pattern, operational weather mode, maximum data value, and whether or not precipitation was detected during the hour leading up to this product.)	Single Radar Site Display Window	Start - **Root Window** Select - **MPEcontrol** Select - **Show Single Radar Site** Select - Radar site to display Click - **OK** Select - **Options**, **Display Supplemental Data** Click - **Close** to return to Root Window
Display (Toggle On/Off) Overlays for the Single Radar Site Four-Panel Display (NOTE - applicable Overlays are **RFC Boundaries**, **States**, **County**, **Cities/Towns**, **Basin Boundaries**, **Rivers**, **Precip Gages**, and **Radar Umbrella**.)	Single Radar Site Display Window	Start - **Root Window** Select - **MPEcontrol** Select - **Show Single Radar Site** Select - Radar site to display Click - **OK** to return to the Root Window Select - **Overlays** Toggle on/off desired overlays by clicking selections.
Close the Single Radar Site Four-Panel Display	Single Radar Site Display Window	Start - **Single Radar Site Display Window** Select - **Control**, **Close**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Add a False (Pseudo) Gage Report (pseudo gage mode)	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Gage** Select - **Add Pseudo Gage** When the mouse pointer turns into a leftward-pointing hand, move the mouse pointer to the location in the viewing area where the pseudo gage is to be located and click the left mouse button. When the **Add Pseudo Gage** window is displayed, move the slider bar to select the desired gage value. Responses are: Click - **OK** to set the pseudo gage value and return to the Root Window. Then select **MPEcontrol, Rerun FieldGen...** to process changes. Click - **Cancel** to exit with no change Click - **Help** to display help information
Display and/or Edit Gage Data from the Tabular Display of all Gages Contained within the WFO or RFC Area's HRAP Grid	Gage Table Window	Start - **Root Window** Select - **MPEcontrol** Select - **Gage** Select - **Show Gage Table ...** Enter data change in right column (Edit) for desired gage. Repeat as necessary. Select - **Control** Select - **Quit** to return to the Root Window Select - **MPEcontrol** Select - **Rerun FieldGen ...** to process changes

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Toggle On/Off the Display of Gage Ids on the HydroView_MPE Display	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Gage** Select - **Show Gage Identifiers**
Toggle On/Off the Display of Gage Values on the HydroView_MPE Display	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Gage** Select - **Show Gage Values**
Display Time Lapse (6, 12, 24, Other) of MPE Data **(As an example, if the 6 hour time lapse is chosen, HydroView_MPE data for the last five hours plus the current hours will be time lapsed.)**	Root Window	Start - **Root Window** Select - **MPEcontrol** Select - **Time Lapse** Select **6 Hr**, **12 Hr**, **24 Hr**, or **Other**. If **Other** is selected, a slide bar is displayed for selection of an hour increment between 1 and 24 hours. To end the time lapse, select **End Loop** or Zoom In (middle mouse button click) or Zoom Out (left mouse button click) on the Geographic Display.
Display the Rainfall Estimate as Derived Directly from the Mosaic of DPA Grids (raw radar precipitation estimate)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Radar Mosaic**
Display the Raw Radar Mosaic with the Mean Field Bias Applied	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Field Bias Radar Mosaic**
Display the Raw Radar Mosaic with the Local Bias Value Applied (actual bias value)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Local Bias Radar Mosaic**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display Precipitation as Estimated by Gages Only	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Gage Only Analysis**
Display Precipitation as Estimated by Satellite Analysis Only (NOTE - available in OB2)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Satellite Precip**
Display Precipitation as Estimated from the Combination of Radar and Gage Data	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Multisensor Mosaic**
Display the Best Estimate QPE (initial FieldGen run)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Best Estimate QPE**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display Multi-Hour Precipitation Estimates (time duration is user selected)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Multi-Hour QPE** In the **Multi-Hour Precipitation Accumulation** dialog box: Select a duration of **6**, **12**, **24**, **36**, **48**, **72**, or **Other** (hours). If **Other**, use the Accumulation Interval slide bar to select a range between 1 and 72 hours. The ending hour of the range defaults to the current hour but can be modified using the **Day Adjust** and **Hour Adjust** arrow buttons or by typing a different date/time in the date/time display field. Select - **Grid** to display by Grid Select - **Basin** to display by Basin Click - **Show Data** to display the data Click - **Close** to return to the Root Window
Display the Local Span Field (memory span in hours since last precipitation)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Local Span**
Display the Local Bias Field Value for Each of the Grid Bins in the HRAP Grid	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Local Bias**
Display the Lowest Available Radar Height that Provides Coverage for a Particular HRAP Grid Bin	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Height Field**

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display Radar Site Providing Coverage for Each HRAP Grid Bin (based on Height field)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Radar Coverage Field**
Display Mean Annual Precipitation by Grid (PRISM)	Root Window	Start - **Root Window** Select - **MPEfield**s Select - **Prism**
Display and/or Edit the Radar-Specific Mean Biases for Radar Sites that Provide Coverage for the WFO or RFC Area	Bias Table Display Window	Start - **Root Window** Select - **MPEfield**s Select - **Display Bias Table** In the **Bias Table Display Window**: Locate the row for the Radar ID to change. To edit the Radar-Specific Mean Bias value, modify the value in the **Bias** field (column 2). Click - **Apply** to save changes Click - **Close** to return to the Root Window without saving
Display Memory Span Information Used in Computing a Radar Site's Mean Field Bias	Bias Table Display Window	Start - **Root Window** Select - **MPEfield**s Select - **Display Bias Table** In the **Bias Table Display Window**: Click on the Radar ID (column 1) to display a site's computation information. Click - **Close** to return to the Root Window

HydroView_MPE Functional Guide

Function	Window to Use	Procedure
Display and/or Modify a Precipitation Gage Value Using the 7 x 7 Grid Display	7 x 7 Display Window	Start - **Root Window** Select - **MPEfield**s Select - **Display 7 x 7** When the mouse pointer changes to a leftward pointing hand, move the mouse pointer to the desired gage icon and click the left mouse button. In the **7 x 7 Display Window**: Click - **Edit** When the slide bar is displayed, change the value of the gage using the slide bar. Click - **Close** to return to the Root Window Select - **MPEcontrol** Select - **Rerun FieldGen ...** to process changes